N.S.W. DEPARTMENT OF AGRICULTURE

BIOLOGICAL BRANCH—DIVISION OF SCIENCE SERVICES

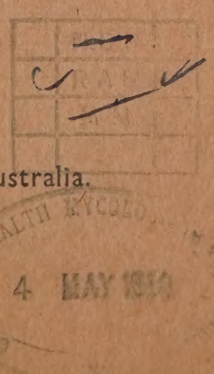
PLANT DISEASE SURVEY

FOR THE

TWELVE MONTHS ENDING 30th JUNE, 1958

Twenty-Eighth Annual Report

Notes compiled by officers of the Plant Pathological Section of the Biological Branch, New South Wales Department of Agriculture, Sydney, Australia.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4 MAY 1959

N.S.W. DEPARTMENT OF AGRICULTURE.

BIOLOGICAL BRANCH - DIVISION OF SCIENCE SERVICES.

P L A N T D I S E A S E S U R V E Y.

for the

TWELVE MONTHS ENDING 30th JUNE, 1958.

TWENTY-EIGHTH ANNUAL REPORT.

Notes compiled by officers of the Plant Pathological Section of the Biological Branch, New South Wales Department of Agriculture, Sydney, Australia.

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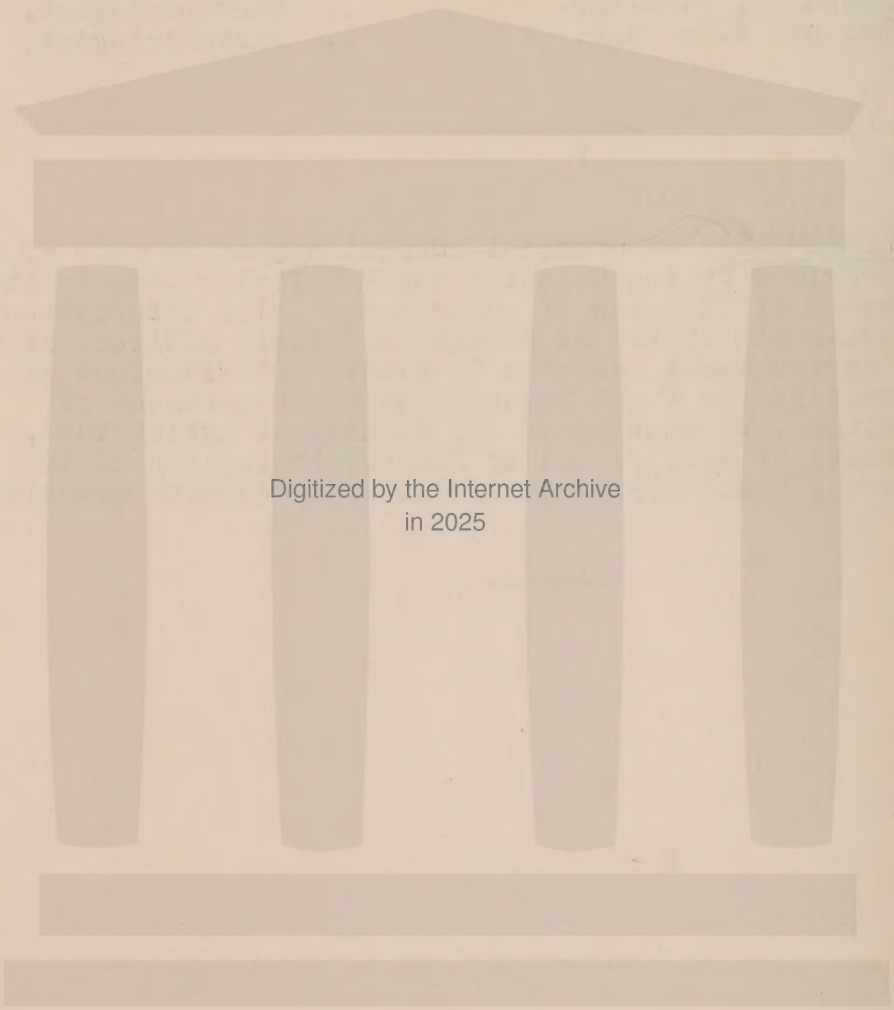

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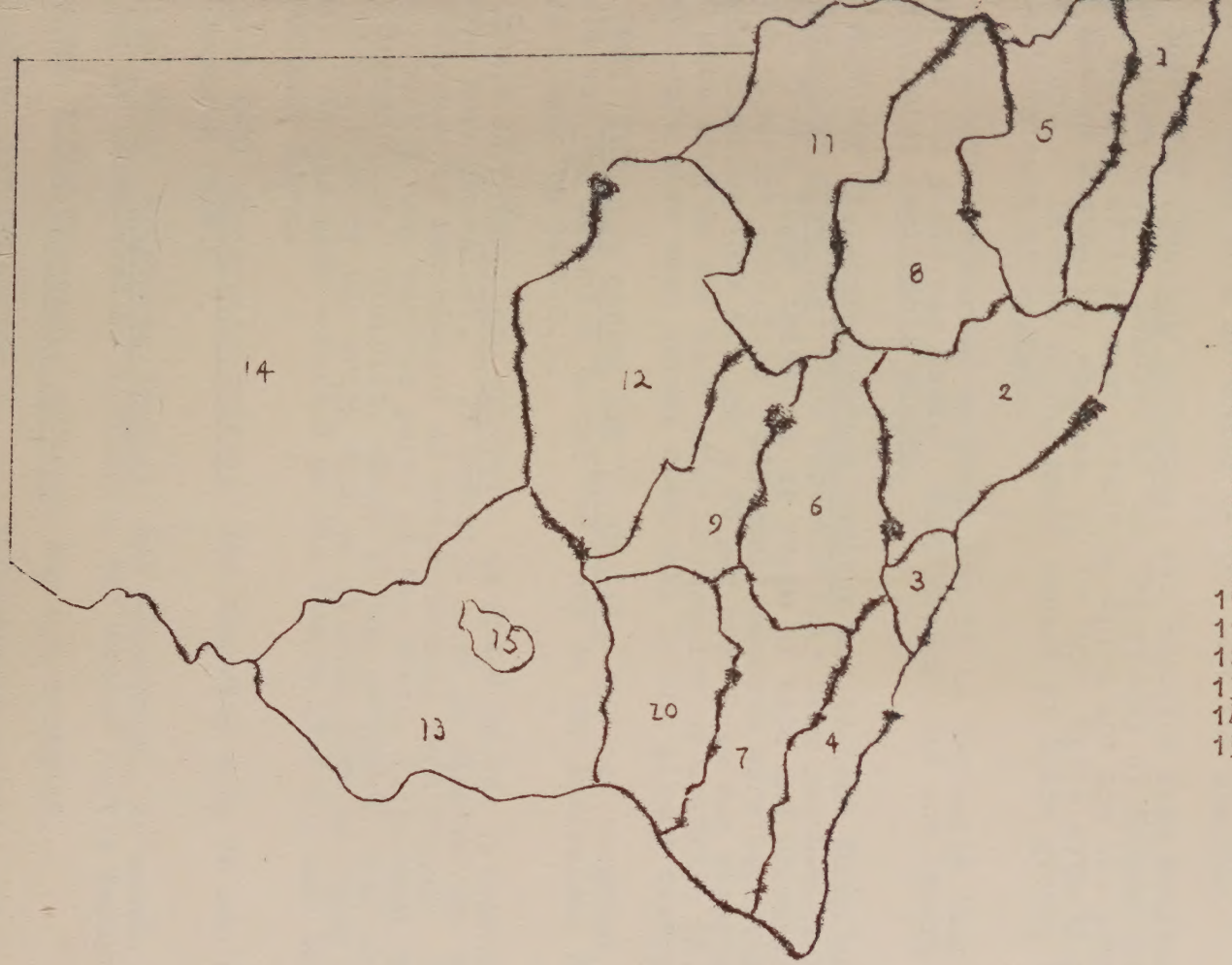

1. North Coast (N.C.)
2. Central Coast (C.C.)
3. Metropolitan Area (M.A.)
4. South Coast (S.C.)
5. Northern Tableland (N.T.)
6. Central Tableland (C.T.)
7. Southern Tableland (S.T.)
8. North Western Slope (N.W.S.)
9. Central Western Slope (C.W.S.)
10. South Western Slope (S.W.S.)
11. North Western Plain (N.W.P.)
12. Central Western Plain (C.W.P.)
13. Riverina (R.)
14. Western Division (W.D.)
15. Murrumbidgee Irrigation Areas (M.I.A.)

DISTRICTS OF NEW SOUTH WALES.

C E R E A L S

WHEAT

The 1957-58 season ended with the smallest wheat harvest since 1919. As a result of severe drought conditions the harvest was only 10,000,000 bushels. No satisfactory estimate of the yield per acre could be made owing to the fact that much of the acreage sown was cut for hay or grazed.

The drought conditions were, of course, very unfavourable for the development of most diseases, and records are few.

STEM RUST (Puccinia graminis tritici) was reported from several areas, but infections were very light. It was observed in irrigated plots of Bencubbin, Curlew, Koala, Sherpa, and Gular, at Leeton Experiment Farm (M.I.A.), in commercial crops of Insignia at Barham (R.) and in Kendee and Gabo at Tamworth (N.S.W.). Festival, Glenwari, Spica, and Warigo are still resistant to all races of stem rust occurring in N.S.W. Also, a report from the University of Sydney states that a strain virulent on Eureka has not been recovered from the wheat belt in either of the last two seasons.

LEAF RUST (Puccinia triticina) was reported from Goulburn (S.T.) and Barham (R.). Studies at the University of Sydney have shown that strains of leaf rust attacking Spica are now the prevalent ones in Eastern Australia, whereas, up to 1954, Spica attacking strains were rare. In view of the small amount of Spica grown, this has been difficult to explain.

HAIL DAMAGE occurred as usual and it is estimated that 1.47 per cent of the yield was lost. Many growers did not insure because of anticipated negligible yields.

FOOT ROT (Helminthosporium sativum and various fungi)and TAKE-ALL (Ophiobolus graminis) were reported only from north-western districts, apart from a light infection in crops of Gabo and Glenwari in the Gubbo district (C.W.S.). Odd small patches were reported from the Wagga district (S.W.S.) and a 20 per cent loss was reported in a 50 acre crop on new land under irrigation at Griffith (M.I.A.). There were also some severe outbreaks in the Albury district (S.W.S.).

BUNT (Tilletia caries and T. foetida) was not recorded in the field but was detected in one delivery to the Australian Wheat Board from Gilgandra (C.W.S.).

LOOSE SMUT (Ustilago tritici), as noted in the previous survey, has become more prevalent. If infected seed is planted the incidence of the disease is independent of environmental conditions. The disease was reported from various parts of the state, being most serious in the Orange (C.T.) district, where it was estimated that it was present in 10 per cent of the crops with an average loss of yield of 2.5 per cent. It was also recorded on the Temora (S.W.S.) and Leeton (M.I.A.) Experiment Farms.

FLAG SMUT (Urocystis tritici) was observed only in one crop of Gabo at Tamworth (N.W.S.).

LEAF SPOT (Septoria tritici) was widespread, as usual, in early spring in south-western districts, but caused little damage.

GLUME BLOTH (Septoria nodorum) was not recorded.

DAMPING OFF (Fusarium sp. and Rhizoctonia solani) was recorded in seedling crops from all parts of the state during the late summer and autumn of 1958. It seems possible that the unusually warm conditions which continued into June may have favoured damping-off and seedling blight.

FROST INJURY was again less troublesomethan usual, presumably wing to the mild winter. Slight frosting was observed in several reas, particularly where crops were sown out of season. There as one record of severe frost injury between soil level and the first ode in the variety Celebration at Junee (S.M.S.).

YELLOW FLECKING (undetermined) was reported to be widespread in ie variety Glenwari in the Tamworth (N.W.S.) district.

WHITE BANDING of the leaves of seedlings was reported from several reas. The horizontal bands usually occurred in a series along the eaf, suggesting that the circumstances inducing them occurred on a umber of successive days. The condition was observed in March and ould not have been cold injury but may well have been the result of me temperature disturbance.

TS

STEM RUST (Puccinia graminis avenae) was reported from several reas, but the infection was very light. The most severe cases were irrigated areas at Barham (R.) but the disease developed too late cause any appreciable yield reduction.

LEAF RUST (Puccinia coronata) was observed on Bular and Algerian the Parramatta district (M.A.).

LOOSE SMUT (Ustilago avenae) was reported to have been present in proximately 10 per cent of the crops in the Orange (C.T.) district th an average yield loss of 2.5 per cent. It was also reported at en Innes (N.T.) and Goulburn (S.T.).

DAMPING-OFF (Rhizoctonia solani) was reported from several areas February in early sown Algerian oats. The weather was hot and mid at the time and in one area of 20 acres at Griffith (M.I.A.) er was a 100 per cent loss.

DOWNY MILDEW (Sclerospora macrospora) was recorded from Leeton .I.A.). This disease is rarely recorded in New South Wales and d not been seen for many years.

FROST INJURY was recorded from Parramatta (M.A.), Barham (R.) and en Innes (N.T.). The injury was severe only at Glen Innes on veral varieties after grazing.

WHITE BANDING of the leaves of seedlings was reported from several eas and appeared to be similar to that reported on wheat.

RLEY

HEAT CANKER was reported on barley seedlings at Tamworth (N.W.S.) March. The seedlings showed a whitish lesion at ground level and bsequently collapsed. No other diseases of barley were reported this branch.

IZE

HEAD SMUT (Sphacelotheca reiliana) was recorded from Bega (S.C.). varieties D.S. 406W and D.S. 409W were both affected in the same ot. The area was sown on November 14th when soil conditions were m and relatively dry.

RUST (Puccinia sorghi) was recorded from Hacksville , Grafton and willumbah (N.C.) and Glen Innes (N.T.) but caused little damage.

LEAF BLIGHT (Helminthosporium turcicum) was recorded from Glen es (N.T.).

LEAF SPOT (Cercospora sp.) was recorded on N.E.P.5 hybrid at ksville (N.C.)

STALK ROT (Fusarium spp.) was quite common on the north and central sts following an unusually wet summer. It was severe, too, in a eding plot at the New England Experiment Farm, Glen Innes (N.T.). cob rot, phase, however, was rare and was recorded only from fton (N.C.). Infection was most commonly observed in the hybrid .128 but this is probably because of its popularity rather than inherent susceptibility.

SOFT ROT (bacterial) was recorded from Glen Innes (N.T.) on the rid 07 x 5120 during a period of hot, wet weather in March. The aths and the bases of the cobs were rotting but the number of nts affected was small. A more severe occurrence of top and stem was reported from Branxton(C.C.) during the same period.

WALLABY EAR (virus) was recorded for the first time in New South es on the north coast, although it has apparently been present in ce amounts for many years. It was observed as far south as llingen, severely damaging some late sown crops and causing a plete loss in several cases. The symptoms developed most strongly crops which were infected while very young and which subsequently erienced very dry conditions. It is believed that, with the sually dry conditions and the haying off of grasses, the leaf- per vector was driven in large numbers onto the young maize crops. disease has been present in southern Queensland for many years was also more prevalent than usual there this season.

VIRESCENCE (undet.) of the tassels was reported from Yanco (M.I.A.).

GHUM

SPIKELET BLIGHT (undet.) was observed in Caprock in several areas the north west. At Warialda (N.W.S.) 50-60 per cent of the nts in an area of 100 acres were affected with an estimated yield uction of 5 per cent. It is clear that the spikelets were ghted before the ears emerged and it is thought that some weather tor must have been responsible. The condition was also observed the same area on Sorghum almum.

STEM ROT (Fusarium sp.) was severe in Teoti sweet sorghum at fton Experiment Farm (N.C.). This variety had lodged, while cy and White African growing alongside were unaffected. It is known, however, whether the stem rot developed subsequent to or the cause of the lodging.

DWARFING (undet.) with a bunching and malformation of the leaves urred in approximately 1 per cent of the plants in 40 acres of rock at Leeton (M.I.A.).

HEAD MOULD (Alternaria tenuis) was reported from Orange (C.T.).

OM MILLET

No records.

E

No records.

AR CANE

(Information was kindly supplied by the Colonial Sugar Refining Co. Ltd.)

During the 1957 crushing season in N.S.W. 303,086 tons of cane were crushed and it is estimated that 11,150 tons were lost as a result of diseases.

RED ROT (Physalospora tucumanensis (Glomerella tucumanensis?)) was again the most serious disease and the losses carried by it have risen from 217 tons in 1925 to 11,140 tons in 1957. The disease has become widespread in the susceptible variety Vesta which is now being replaced by more resistant varieties.

FIJI DISEASE (virus) caused an estimated loss of 10 tons but the other virus diseases, CHLOROTIC STREAK, RATOON STUNTING, and MOSAIC, caused negligible losses, although their presence was observed.

PINEAPPLE DISEASE (Ceratostomella paradoxa) and RED STRIPE (Xanthomonas rubrilineans) were not recorded.

MISCELLANEOUS GRASSES

After the humid weather in February the development of SLIME MOULDS was reported on lawns and pastures from many parts of the state. A small amount of injury was caused by their smothering effect.

AWNLESS BARNYARD GRASS (Echinochloa colonum)

SMUT (Ustilago sphaerogena) was recorded for the first time in New South Wales from Pilliga (N.W.P.).

BENT GRASS (Agrostis tenuis)

BROWN PATCH (Rhizoctonia solani) was widespread in December, January and February. In spite of the dry conditions and water restrictions in the Metropolitan Area, bowling and golf greens were kept moist enough to favour the disease.

DOLLAR SPOT (Sclerotinia homoecarpa) was also widespread and most troublesome between October and February, occasional outbreaks being reported as late as the middle of May.

LEAF BLIGHT and MELTING OUT (Helminthosporium sp.)was recorded on a bowling green at Forbes (C.W.D.). This disease has proved difficult to control but reports from the United States suggest that phenyl mercury acetate is effective. It is clear, however, that trial areas should be treated before the whole green in case the fungicide causes a scorching.

SEEDLING BLIGHT and FADING OUT (Cladochytrium sp. and/or Curvularia lunata) were again prevalent in seedling stands. It was reported from Newport that phenyl mercury acetate checked a Curvularia melting out but that the grass was severely scorched.

COCKSFOOT (Dactylis glomerata)

ERGOT (Claviceps purpurea) was recorded on a small clump of plants at Tagonga (S.C.). The plants were heavily infected.

LEAF SPOT (Mastigosporium rubricosum) was severe, as usual, in the autumn at Mt. Wilson (C.T.).

STRIPE (Passalora graminis) was recorded at Glen Innes (N.T.).

VIRESCENCE (undet.) was observed at Glen Innes (N.T.).

COLUMBUS GRASS (Sorghum almum)

RUST (Puccinia purpurea) was recorded for the first time in New South Wales at Grafton Experiment Farm (N.C.). As often happens with this rust and with P.sorghi, the sori were heavily parasitised by Darluca filum.

COUCH (Cynodon dactylon)

BROWN PATCH (Rhizoctonia solani) was reported from the Metropolitan Area, Muswellbrook (C.C.), and Byron Bay (N.C.).

DOLLAR SPOT (Sclerotinia homoeocarpa) was not recorded on couch this season.

LEAF BLIGHT and DYING OUT (Helminthosporium cynodontis) was severe during the summer on lawns and sports turf. The disease was very common in the metropolitan area and greenkeepers reported that it was very difficult to control.

KANGAROO GRASS (Themeda australis)

LEAF SPOT (Phyllachora sp.) was recorded at Oakdale (S.C.).

SMUT (unident.) was recorded at Yamba.

KIKUYU (Pennisetum clandestinum)

LEAF SPOT (Helminthosporium sp.) was recorded from the north coast and the metropolitan area, but damage was insignificant.

DYING OUT (undet.) in patches which gradually increased in size was common on the north coast and some paddocks were killed out on the lower Clarence. No fungous or bacterial attack could be found and the reason for the condition is not yet known, although the possibility of its association with a mite attack is being investigated.

RYE GRASSES (Lolium spp.)

RUST (Puccinia coronata) was severe in the late autumn on Wimmera Ryegrass (L. rigidum) at Yanco (N.I.A.) and on Perennial Ryegrass at Moss Vale (S.C.), Robertson (S.C.) and on the central coast.

SUDAN GRASS (Sorghum sudanense)

LEAF BLIGHT (Helminthosporium turcicum) was severe in a crop at Lyoglo (N.C.) during a hot, humid period in March.

FIELD AND FODDER CROPS

CLOVER, BERSEEM (Trifolium alexandrinum)

SCORCH (Kabatiella caulivora) was observed damaging a stand at Hexham (C.C.) in October.

CLOVER, CRIMSON (Trifolium incarnatum)

SOOTY BLOTCH (Polythrincium trifolii) was reported to be severe in portions of a stand at Comboyne (C.C.). This disease is rare in New South Wales and has previously been recorded only on red clover.

CLOVER, RED (Trifolium pratense)

ANTHRACNOSE (Colletotrichum trifolii) was observed at Jones Island (C.C) during a period of hot humid weather in March. This is the first time for some years that this disease has been observed in New South Wales.

LEAF SPOT (Stemphylium sarciniforme) was recorded from Nambucca (N.C.) and Wyong (C.C.) in June.

ROOT AND CROWN ROT (Macrophomina phaseoli) killed many plants in a stand at Barrington (C.C.).

ROOT KNOT (Meloidogyne sp.) was again recorded from the Wingham (C.C.) district.

RUGOSE LEAF CURL (Virus) was recorded from Kyogle (N.C.).

CLOVER, SUBTERRANEAN (Trifolium subterraneum)

RUST (Uromyces trifolii subterranei) occurred as usual and severe infections were reported in May from Wyong (C.C.), Orange (C.T.), and Berrigan (R.).

SCORCH (Kabatiella caulivora) was not reported this year.

DAMPING-OFF AND STUNTING (Fusarium sp.) was recorded in Clare at Wollongbar (N.C.) in May after a month of exceptionally wet conditions.

LEAF AND PETIOLE SPOT (Cercospora sp.) was unusually severe in a sward at Dungog (C.C.) in May, causing almost complete breakdown of the plants in some patches.

BURN (Pseudoplea trifolii) occurred on Clare at Wollongbar (N.C.) but was unimportant.

STUNTING and LITTLE LEAF (Virus) was reported from Orange (C.T.)

FROST INJURY was reported from several localities in August, the most severe damage being at Wellington (C.W.S.) and Wentworth (W.D.). In the latter area Clare was affected more seriously than Yarloop.

CLOVER, WHITE (Trifolium repens)

RUST (Uromyces flectens) was recorded in a clover introduction plot at Yanco Experiment Farm (M.I.A.). This disease is rare in N.S.W. and has previously been seen only in one locality in the metropolitan area.

LEAF SPOT (Cercospora sp.) was observed at The Oaks (S.C.). This disease has not been recorded previously on white clover.

RUGOSE LEAF CURL (Virus) was observed in irrigated stands of the Ladino variety at Kyogle (N.C.). This is a new record for New South Wales.

ROOT KNOT (Meloidogyne sp.) was recorded at Dingo Creek (C.C.). This, together with the effects of red spider and drought, is believed to have been responsible for the thinning of the stand concerned.

FROST INJURY was recorded from Orange (C.T.) in June. The long, mild autumn is thought to have promoted soft growth which was very sensitive to the sudden onset of cold conditions.

COWPEA (Vigna sinensis)

STEM ROT (Phytophthora vignae) which was so severe last year, was not recorded. Several plants suspected of being infected were forwarded from the north coast but were found to be suffering from a secondary stem rot following bean fly injury.

ROOT KNOT (Meloidogyne incognita) was severe on Wollongbar Experiment Farm (N.C.). This disease is reported to have rendered the growing of experimental plots of Vigna and Dolichos app. impossible.

CROTALARIA (Crotalaria lanceolata)

STEM CANKER (Rhizoctonia solani) caused the death of half the plants in an experimental plot at Grafton Experiment Farm (N.C.) in March.

KALE (Brassica oleracea var. acephala)

STUNTING (phosphorus deficiency) was very severe in a crop of Chou Moellier at Orange.

BLACK ROT (Xanthomonas campestris) was severe in the regrowth of a crop of Hungry Gap at Gloucester (C.C.).

LINSEED (Linum usitatissimum)

No records.

LUCERNE (Medicago sativa)

DOWNY MILDEW (Peronospora trifoliorum) has been unusually severe during the spring and autumn of the past year. It was damaging to the first two or three cuts in the spring on the north coast and has been very injurious, particularly to seedling stands, during the long, mild autumn, being recorded from Dungowan (N.W.S.), Gooloogong (C.W.S.), Paterson (C.C.), Bathurst (C.T.), and other areas.

ANTHRACNOSE (Colletotrichum trifolii) was recorded at Appin (S.C.). The lesions were mostly situated at the base of the stems and there was considerable die-back. This is the first record of this disease on lucerne in N.S.W. since 1915.

RUST (Uromyces striatus), like downy mildew, was unusually prevalent during the mild autumn, severe infections being recorded from Wyong (C.C.), Gooloogong (C.W.S.), Parkes (C.W.S.), Tenterfield (N.T.), and the Sydney Metropolitan Area.

LEAF SPOT (Pseudopeziza medicaginis) was widespread as usual, but caused little damage.

YELLOW LEAF SPOT (Pyrenopeziza medicaginis) was severe in a small plot at Gosford (C.C.).

STEM CANKER and CROWN ROT (Rhizoctonia solani) was severe at old Bonalbo (N.C.) during the warm, humid weather in March.

ROOT ROT (Fusarium spp., Phytophthora sp.and other fungi associated) was troublesomeduring the wet weather in summer. In most cases a section of the stem was rotted some distance below the surface of the soil. There were records of this disease from Boggabri (N.W.P.), Tamworth (N.W.S.), Narromine (C.W.S.), Forbes (C.W.S.), Campbelltown (M.A.), and Narellan (M.A.).

STEM NEMATODE (Ditylenchus dipsaci) was observed in several stands at Tamworth (N.W.S). These stands were all spray irrigated and had been sown in the autumn of 1957. The disease was noticed in August and September and, as the land had not carried lucerne previously, it is thought that the nematodes may have been introduced on the seed. The disease was also observed in a stand at Paterson (C.C.) during the same period.

WITCHES' BROOM (Virus) was observed to be widespread during the summer in areas west of the mountains. Plants showing typical symptoms and others showing the curious cauliflower-like malformation of the inflorescence were observed in most areas.

FROST INJURY was recorded from Cowra (C.W.S.) and Berrigan (R.) at the end of September, when there was a sudden and severe cold spell.

LUPIN, NEW ZEALAND BLUE (Lupinus angustifolius)

STEM STREAK (Broad Bean Vascular Wilt Virus) was present in approximately 30 per cent of the plants of a 1½ acre plot at Penthurst (M.A.). As, however, the plants were mature and the crop ploughed in shortly after the disease was recognised, the damage could have been unimportant.

MEDIC, BURR (Medicago denticulata)

ANTHRACNOSE (Colletotrichum trifolii) was recorded for the first time in New South Wales at Baulkham Hills (M.A.).

MEDIC, SPOTTED (Medicago arabica)

RUST (Uromyces sp.) was observed on a plant growing in a patch of heavily rusted M. denticulata. The reaction of the spotted medic was not a fully susceptible one.

PSORALEA (Psoralea bituminosa)

WITCHES' BROOM (Virus) was recorded from Condobolin (C.W.P.).

SCHMIE (Bochmeria nivea)

SCORCH (Salt toxicity) was recorded from Yanco Experiment Farm (I.I.A.).

RAPE (Brassica napus)

BLACK ROT (Xanthomonas campestris) was recorded in a crop of Dwarf Essex at Gloucester (C.C.).

RUSSIAN COMFREY (Symphytum officinale)

MOSAIC (Virus) was recorded from Gosford (C.C.) and the metropolitan area.

ROOT KNOT (Meloidogyne incognita) was very severe in a planting at Cammeray (M.A.).

SESAME (Sesamum indicum)

WILT (Verticillium sp.) was recorded from Moree (N.W.P.). This is a new record for New South Wales.

POWDERY MILDEW (Oidium sp.) was recorded from Moree (N.W.P.) where it was very severe. This is a new record for New South Wales.

BIG BUD (Virus) affected 10 - 15 per cent of the plants in a trial area at Yanco Experiment Farm (M.I.A.). This is a new record for New South Wales.

TOBACCO (Nicotiana tabacum)

BROWN STEM-ROT (Phytophthora parasitica) was recorded from a small area of Hicks at Tenterfield (N.T.). It has previously been assumed that the disease was 'black-shank' caused by Phytophthora parasitica var. nicotianae. However, the disease has never been serious in northern N.S.W. or southern Queensland nor has the fungus been shown to be virulently pathogenic. Following the view taken in Queensland it is now believed that the disease is the same as that occurring in Africa, which has been named 'brown stem-rot' to distinguish it from the more virulent 'black-shank' occurring elsewhere.

ROOT KNOT (Meloidogyne sp.) was reported from the Ashford (N.T.) area.

VETCH (Vicia sativa)

SHOOT BLIGHT, STEM BLACKENING, and ROOT ROT (? Broad Bean Vascular Wilt Virus) was widespread on the north coast on Golden Tares. Young plants were often killed but, in the case of plants of any size, there was usually recovery after an initial die-back. The dark-coloured root rot recorded in the 1957 survey was subsequently found to be caused by a species of Cylindrocladium with a perfect stage in Calonectria. This disease, however, was not recorded in 1958.

STEM ROT (Sclerotinia sp.) was recorded from Yanco Experiment Farm (M.I.A.) on Golden Tares.

LEAF SCORCH (potassium deficiency) was recorded from Wollongbar (N.C.) on Golden Tares.

CANE FRUIT.

no reports.

CITRUS FRUITS.

Citrus trees generally in coastal orchards suffered rather severely from the dry and hot conditions of spring and summer, and where there was no irrigation fruit shed was very heavy and tree condition impaired.

PHYTOPHTHORA ROOT, COLLAR & FRUIT ROT (Phytophthora citrophthora). Very dry and hot weather during late spring and summer hastened the decline of old trees in coastal citrus areas which had been injured by root rot in previous years. Frosts during late winter 1957 also affected trees weakened by root rot in the Gosford district (C.C.). Following late summer and autumn rains some collar rot occurred in coastal orchards. Lemons, Washington navel oranges and Marsh grapefruit were the principal varieties affected. At Paterson (C.C.) some infection of seedling mandarin trees was noted. Decline of old trees on rough lemon stock continues in the Murrumbidgee Irrigation Areas and in irrigation settlements in the lower Murray River district (W.D.). An unusual and severe outbreak of collar rot occurred in a Griffith (M.I.A.) orchard. In normal seasons the arid climate of this area does not permit the development of collar rot. In this case the trees were Eureka lemon, very large trees with the canopy reaching the ground, and under spray irrigation. Rain and general level of humidity during late summer was sufficient to permit a severe and rapid outbreak of collar rot.

BLACK SPOT (Guignardia citricarpa). Hot weather and drying winds resulted in heavy development of black spot during late October and November in Central Coast orchards and in the Hills and Windsor districts (M.A.). Regreening of fruit rind commenced towards the end of November halting further development of spot. Due to extremely dry weather trees in unirrigated orchards were in rather poor condition by late spring and spray programmes for 1957-8 were suspended. Some black spot was noted in May 1956 on Washington navel oranges in the Windsor (M.A.) area following an unusually warm protracted autumn.

MELANOSE (Diaporthe citri). Little infection occurred during spring and summer months, but following the drought-breaking rains of late December and January, heavy infection of new foliage growth and fruit occurred in all coastal citrus areas. Emperor Mandarins, Washington Navel oranges and Seville oranges were particularly severely affected. Some collar rot due to this fungus was reported in young Emperor mandarins from the Hills district (C.C.).

SCAB (Sphaceloma fawcettii scabiosa). Main crop lemons in Coastal citrus orchards were free of scab but intermediate settings were more or less affected. Infection of nursery stock was very light.

BROWN SPOT (Cause not known) no infection occurred during the spring growing period but rather heavy loss of fruit was reported in March in Hawkesbury River orchards (M.A.).

SEPTORIA SPOT (Septoria depressa). Very little Septoria spot occurred in Murrumbidgee Irrigation Areas and Upper Murray River (R.) orchards during winter 1957.

SOOTY BLOTCH & FLY SPECK (Gloeodes pomigena and Leptothyrium pomi) were reported in early winter from some Hawkesbury River (M.A.) and Gosford (C.C.) orchards.

ARMILLARIA ROOT ROT (Armillaria mellea). Armillaria root rot was particularly active following late summer rains, a long period of warm autumn weather favoured its development. Losses were noted in Hawkesbury River, Maroota (M.A.), Somersby and Paterson orchards (C.C.).

COLLAR ROT (Rhizoctonia solani) was reported affecting seedling trifoliata stock at Coomealla Citrus Research Station (W.D.).

SUDDEN DEATH (Suspected Coprinus) additional cases of sudden death were reported from Koraleigh (W.D.), Monak (W.D.), Curlwaa (W.D.), Terrigal (C.C.) and Griffith (M.I.A.), of trees on trifoliata stock. Coprinus sp. was consistently associated with affected trees. About 25 trees of grapefruit on Seville orange stock in a Griffith orchard were found to be affected. This was the first record of the disease on a stock other than trifoliata.

SCALY BUTT (Virus). A three year old Ellendale Mandarin on trifoliata stock in a Griffith (M.I.A.) orchard was found to be affected with this disease. Scaly butt is very rare in Ellendale Mandarin.

SHELL BARK (Suspected virus). Rather marked shell bark outbreaks followed hot dry spring and summer weather, particularly in the Mangrove Mountain, Gosford (C.C.) and Griffith (M.I.A.) areas.

STEM PITTING (Virus). Infection continues to advance in several orchards at Goodnight and Coomealla (W.D.). A rather severe case of stem pitting was observed affecting Calamondin at Narara (C.C.).

TRISTEZA (Virus). Losses are continuing in a Monak (W.D.) orange orchard. Very few of the original planting (now 12 years old) now remain.

FLORIDA GUMMOSIS (Suspected virus). Rather widespread symptom development occurred. Records include Calamondin trees at Yocumwal (R.), old orange and grapefruit at Curlwaa (W.D.), young grapefruit at Barham (R.) and the Sydney Metropolitan Area, young Valencia oranges at Griffith (M.I.A.), Wallent Mandarin at Branxton (C.C.) and grapefruit at Griffith (M.I.A.).

CRINKLE LEAF (Virus) no new records.

PSOROSIS A (Virus) no new records.

PSOROSIS, CONCAVE GUM (Virus) a single tree of Washington navel orange (32 years old) affected with this disease was located in a Raymond Terrace (C.C.) orchard.

XYLOPOROSIS (Virus) a serious decline of 3 year old Ellendale Mandarins on trifoliata stock in a Griffith (M.I.A.) orchard appears to be due to this virus. A single tree of Ellendale Mandarin on rough lemon stock in a Metropolitan garden also appears to be affected. As Ellendale is a Queensland seedling, infection must have been acquired from an introduced variety, possibly a symptomless carrier.

WOODY GALL (Virus). This disease of rough lemon was reported from an isolated tree in a home orchard at Gresford (C.C.), from a naturalised tree at Minnamurra (S.C.) and from seedling trees at Collaroy, Avalon and the Sydney Botanic Gardens (M.A.). Severe gall development was seen on rough lemon stock of Washington Navel orange trees at Castle Hill (M.A.) and of Valencia orange trees at Cornwallis (M.A.).

ROUGH LEMON DECLINE (Suspected virus). No further records.

YELLOW LEAF (Magnesium deficiency) was recorded from Coastal orchards in all citrus growing areas, and from Tocumwal (R.).

EXANTHEMA (Copper deficiency). No further records.

MOTTLE LEAF (Zinc deficiency) was observed in orchards in the Hills district, Hawkesbury River (M.A.) and in the Lower Murray River Area (W.D.).

MANGANESE DEFICIENCY was again rather general in Hills District and some Pitt Town orchards (M.A.). Symptoms suggestive of this disorder were seen on grapefruit at Barham (R.).

BORON TOXICITY. Severe leaf pattern and some defoliation was observed in an orchard at Griffith (M.I.A.). Boron toxicity was also reported from a station orchard at Moree.

SALT TOXICITY continues to be a problem in some orchards in the Murrumbidgee Irrigation Areas.

FROST INJURY. Heavy and severe frosts in late winter 1957 caused considerable injury to Valencia oranges in the Murrumbidgee Irrigation Areas. Severe frosts during June, 1958 following an unusually mild and prolonged autumn caused foliage injury in the Murrumbidgee Irrigation Areas, particularly to lemons, and severe fruit injury to lemons and Washington Navel oranges.

YELLOWS. This disease was not observed during winter 1957.

POME FRUIT.

PPLE.

BLACK SPOT (Venturia inaequalis). Infection conditions hrough the spring were unfavourable in all districts except Batlow S.W.S.), where heavy primary infection occurred in one orchard, ue to a faulty spraying schedule. Conditions for secondary nfection were favourable in most districts from January forward and Batlow late infection was very heavy in one orchard which had ustained only mild primary infection. In that district a little ate infection occurred in many orchards. At Orange (C.T.) second- ry infection occurred in one orchard only. It is believed that at range the 1957 winter was so dry that perithecia failed to mature rmally. No infection was detected on the Northern Tablelands. Young (S.W.S.) slight primary infection occurred on unsprayed rees during two slight infection periods, one in mid October and d one in November. At Batlow (S.W.S.) there were two primary nfection periods in October (15th to 22nd) and two in November. sions first appeared between 4th and 12th November from infections ich occurred in mid-October.

POWDERY MILDEW (Podosphaera leucotricha). Severe infection curred on the varieties Jonathan, Rome Beauty and Gravenstein in l districts and also on the coastal grown variety Kirks Carrington. fection was very prevalent throughout the spring, being especially vere in those orchards where infected buds or laterals from the evious season had not been pruned out. The progress of the disease ackened in mid-summer but increased again later where trees put on flush of Autumn growth.

LIMB CANKER AND DIEBACK (Botryosphaeria ribis). The limb nker phase of this disease was prevalent this season, especially those orchards which were not adequately watered during the ought and heat-wave conditions which occurred through the Spring d early summer. The trunk canker disease of McIntosh Red Apples ith which the pin-hole borer Xyleborus pseudoangustatus is sociated) was more serious at Oakdale (S.C.) this season than it s been since 1946. This is believed to be due to greater tivity of the pin-hole borer, which in turn may be related to ought conditions and forest fires. The spur blight and shoot ight phases of this disease were of no significance this season.

RIPE ROT (Gloeosporium sp.) was prevalent in the Metropolitan ea and at Bilpin (C.T.) and Oakdale (S.C.) particularly on Willie arp and Granny Smith. In one planting of 250 Granny Smith trees Oakdale, infection was confined to about 50 trees nearest to a he windbreak.

ROOT ROT (Armillaria mellea). Severe infection has become dent in some blocks of trees in the Willigobung Soldier Settle- t Estate at Batlow (S.W.S.). The most severely affected ocks are those which carried the heaviest timber, which was cleared y about twelve months before planting. In the most severely fected orchard about 15% of the trees are either dead or showing idence of extensive infection. In all cases investigated, the urce of inoculum was found to be small pieces of root material, stly no more than one foot long and up to five inches in diameter, the apple roots had grown onto these pieces of buried wood.

MOSAIC (Virus) was again widespread on Jonathan.

GREEN CRINKLE (Virus). Symptoms suggestive of green nkle occurred in a Granny Smith orchard at Leeton (M.I.A.).

PHYSIOLOGICAL DISEASES. Bitter pit occurred rather commonly wherever trees were carrying light crops of large fruit. The drought and heat-wave conditions which occurred during the spring and early summer in many districts were conducive to the occurrence of a lenticel spot form of superficial orchard scald. Crinkle (early surface watercore breakdown) occurred in many orchards, especially in coastal districts. Jonathan spot was prevalent on red varieties, particularly on Jonathan.

NUTRITIONAL DISEASES. Boron deficiency symptoms developed in many tableland orchards under drought conditions this season. Zinc deficiency occurred on the Murrumbidgee Irrigation Areas and in the Metropolitan Area. Manganese deficiency also occurred in the Metropolitan Area.

SOOTY BLOTCH (Gloeodes pomigena) was prevalent at Camden (S.C.) especially on late hanging Granny Smith fruit which had received a reduced fungicide schedule for black spot control.

BLACK ROT (Physalospora obtusa) was recorded in an orchard at Carlingford (M.A.) and at Bilpin (C.T.) affecting only the variety Jonathan.

WOOD ROTS (Polystictus spp. and Schizophyllum commune). By late autumn or early winter it became evident that during the mild wet autumn, extensive invasion by wood rotting fungi had occurred on trees damaged earlier by heat, fire, canker (Botryosphaeria) and other agencies.

PEAR.

BLACK SPOT (Venturia pyrina). The incidence of black spot on pears was similar to that on apples this season.

BLAST (Pseudomonas syringae) caused no loss of blossoms this season.

DEFICIENCY DISEASES. Boron deficiency in the forms of internal cork and superficial cork occurred in many tableland orchards under drought conditions. Iron deficiency was recorded at Gunnedah (N.W.S.).

VIRUS DISEASES. Further evidence of the occurrence of stony pit was obtained at Orange (C.T.). Evidence of the virus nature of a scaly bark disease of Williams pears was obtained.

QUINCE.

FLECK (Fabraea maculata). Very little infection was reported this season.

LIME INDUCED CHLOROSIS (Iron deficiency) was recorded at Gunnedah (N.W.S.).

STONE FRUIT.

ALMOND.

SHOT HOLE (Clasterosporium carpophilum) was less severe than usual in most districts.

RUST (Tranzschelia pruni-spinosae). Severe infection occurred at Griffith (M.I.A.).

APRICOT.

BACTERIAL CANKER (Pseudomonas syringae) occurred again in several orchards on the Murrumbidgee Irrigation Areas.

BROWN ROT (Sclerotinia fructicola). No blossom blight or fruit infection occurred on the Murrumbidgee Irrigation Areas this season and none was reported from other districts.

SHOT HOLE (Clasterosporium carpophilum) was less severe than usual, especially in coastal districts.

FRECKLE (Fusicladium carpophilum). Moderate infection occurred in the Metropolitan Area.

RUST. (Tranzschelia pruni-spinosae). Heavy infection developed in late summer in the Metropolitan Area.

CHERRY.

BACTERIAL CANKER (Pseudomonas syringae) caused serious damage in some plantings of young trees at Orange (C.T.) and Young (S.W.S.).

BROWN ROT (Sclerotinia Fructicola). The cherry crops this season were harvested under drought conditions and no loss from brown rot occurred.

VIRUS DISEASES AND VIRUS-LIKE CONDITIONS. The position was unchanged.

NECTARINE.

BROWN ROT (Sclerotinia Fructicola) caused little or no loss this season.

FRECKLE (Fusicladium carpophilum). Very little infection occurred during the drought conditions this spring.

ROOT ROT (Phytophthora cinnamomi). With the occurrence of temporary waterlogging resulting from heavy late summer rains, further losses from root-rot occurred in non-drained orchards on the heavy soils derived from Wiannamatta shale in the Metropolitan area.

RUST (Tranzschelia pruni-spinosae). Heavy infection occurred on non-sprayed trees after mid-summer.

LEAF CURL (Taphrina deformans). Heavy infection occurred on non-sprayed and poorly sprayed trees.

PEACH.

BROWN ROT (Sclerotinia fructicola). No losses occurred in early maturing peaches. A trace of infection occurred toward the completion of harvesting of mid-season varieties at Bathurst

EACH. (CONT'D)

C.T.), Young (S.W.S.) and in the Metropolitan Area. At Camden S.C.) there was a considerable increase in infection toward the ompletion of harvesting of mid-season varieties. With the late aturing canning peaches on the Murrumbidgee Irrigation Areas slight o moderate infection occurred in Phillip's Cling and Golden Queen n some orchards.

ROOT ROT (Phytophthora cinnamomi) again caused losses in ate summer in non-drained orchards on heavy soils derived from iannamatta shale in the Metropolitan Area.

RUST (Tranzschelia pruni-spinosae). With the breaking of he drought in the Metropolitan Area in January, the incidence of rust ncreased rapidly and premature defoliation occurred where growers ailed to apply protective sprays. Severe rust infection was ecorded late in the season at Warialda (N.W.S.).

LEAF CURL (Taphrina deformans). Severe infection occurred on on-sprayed trees and on trees where sprays were inadequately applied r badly timed. Reports from the Metropolitan Area indicate that ontrol with a mixture of lime sulphur 1-20 plus superior winter oil -100 was less effective than with copper sprays.

FRECKLE (Fusicladium carpophilum) caused no loss this season trees sprayed with minimum fungicide schedules. Heavy infection n non-sprayed trees occurred at Cessnock (C.C.).

SHOT HOLE (Clasterosporium carpophilum). No loss from shot ole infection was reported this season.

CROWN GALL (Agrobacterium tumefaciens) again caused losses nurseries in the Metropolitan Area. Heavy infection on seedling eaches was reported from Glenoric (M.A.).

WOOD ROTS (Polystictus spp. and Schizophyllum commune) were revalent in autumn and winter on trees damaged by heat and forest res during the drought in spring and early summer.

POWDERY MILDEW (Sphaerotheca sp.). At Griffith (M.I.A.) ight powdery mildew infection was detected in several blocks of olden Queen peaches. Infection was confined to occasional fruit ely.

UM.

BROWN ROT (Sclerotinia fructicola). No significant losses curred this season, but slight infection occurred in the later turing varieties.

RUST (Tranzschelia pruni-spinosae). Heavy rust infection curred on prunes at Young (S.W.S.) and on the Murrumbidgee Irriga- on Areas during the late summer and autumn. Due to drought nditions many growers failed to apply the last spray (mid-January) the recommended three-spray schedule. In all instances where is spray was omitted premature defoliation occurred in March and ril. Where the January spray had been applied trees held their liage well into May.

Heavy infection was general on plums in most districts for w growers had protected their trees before the onset of wet ather in January or February.

BACTERIAL CANKER (Pseudomonas syringae). Infection on ung prune trees was widespread at Young (S.W.S.) and serious mage occurred in some blocks. A great deal of the infection was

M. (CONT'D)

tred on pruning cuts. Heavy infection also occurred in a plum nting at Tahmoor (S.C.).

BACTERIAL SPOT (Xanthomonas pruni). Severe infection urred on Wickson plums at Medowie (C.C.) and on Ruby Blood plums Orange (C.T.). Other varieties in each orchard involved were affected.

SHOT HOLE (Clasterosporium carpophilum). No instance of nificant damage from shot hole infection was reported.

PLUM POCKETS (Taphrina pruni). One tree (an unidentified od plum) in a garden at Leura (C.T.) produced almost an entire p of affected fruit. It was reported that the tree had not viously produced affected fruit. Other trees of the same variety the same garden produced healthy fruit. This disease seems to confined to the Leura-Katoomba region of the Central Tablelands N.S.W.

WOOD ROTS (Polystictus spp. Schizophyllum commune and es spp.). Wood rot development was extensive at Young (S.W.S.) ing the autumn particularly on old trees.

TROPICAL FRUITS.

CADO.

ROOT ROT (Phytophthora cinnamomi) was recorded from willumbah (N.C.) and from Coffs Harbour (N.C.).

SION FRUIT.

FUSARIUM WILT (Fusarium oxysporum f. passiflorae). re was a serious outbreak of this disease in one young plantation Kulnura (C.C.). By September several hundred vines planted ing the previous January were badly infected or wilted and the ses sustained will probably lead to the abandonment of the block. re had been a previous outbreak of wilt on this farm in another ck several hundred yards distant in 1955. The source of infection this outbreak was investigated without finality.

MOSAIC OR WOODINESS (Virus). During May a tip blight and ng back of shoots of vines occurred at Somersby and Kulnura C.) in several plantations about six months old. Mottling and ting of the surface of the shoots were associated with the tip ght. April and May were unusually warm with ample rains and it considered that shoot growth occurred under conditions optimum multiplication and concentration of the virus. A similar th of shoots occurred during the autumn and early winter of 1947 r similar environmental conditions.

ANA.

LEAF SPOT (Cercospora musae) was widespread plantations throughout this , but losses were less severe because of the dry summer conditions rally experienced. However, some plants were denuded of foliage he Richmond district (N.C.) as early as late April.

SPECKLE (Cause undet.) was prevalent in all districts this and in the Coff's Harbour (N.C.) and Tweed districts (N.C.) ed more defoliation than leafspot in many plantations. The sibility of this disease being caused by the fungus chloridium musae is still under investigation. Past experience indicated that occurrence of Speckle is associated with red spider ranychus sp.) damage but during wet summer and autumn seasons

ANA (CONT'D)

fection has occurred in the absence of red spider. Observations e this year indicate that serious infection has occurred in a atively dry season in the apparent absence of red spider. Concen- te oils applied in current Fogging and Misting Trials for the trol of leaf spot at Lismore have proved ineffective in the trol of Speckle.

BUNCHYTOP (Virus) Records compiled by the Division of ticulture show that a total of 4,500 infected plants were detected destroyed this year, an increase of 332 detections on the vious year's figures. Bunchy Top records for the four preceding rs have been 1953/54, 3164; 1954/55, 2809; 1955/56, 3159 and 1956/57, 8.

Whilst a very low incidence of the disease is being main- ned by the present control programme detections have been made s year in the Brunswick and Tweed (N.C.) areas in plantations sidered to be free of the disease. The factors determining the ent of latency and the vector association are under review.

ROOT ROT (cause undet.). Extensive necrosis in the root tem of plants is widespread in plantations on the North Coast, ecially on the lighter soil types and is the cause of unthrifti- s in many plantations. Much of the root loss has formerly been ributed to beetle borer (Cosmopolites sordidus) activity, but trol of the beetle has revealed the problem in a new light. ge numbers of the burrowing nematode Radopholus similis, probably anana strain, have been recovered from cortical lesions on banana ts and from soil surrounding unthrifty plants. The significance this nematode, and the possible interaction of a fungus in the drome is being investigated.

AW.

RIPE FRUIT ROT (Gloeosporium spp.) has again taken heavy l of fruits maturing in the winter and early spring months.

POWDERY MILDEW (Oidium sp.) was again reported from fton (N.C.).

BLACK SPOT (Ascochyta caricae). The first record of this ease was made from Coff's Harbour (N.C.) where it was responsible a leaf and stem rot.

ELLA.

SCLEROTINIA ROT (Sclerotinia sp.) stem rot resulting from ospore infection was identified from Grafton (N.C.).

ROOT KNOW (Meloidogyne javanica). Several plants growing Griffith (M.I.A.) were heavily infested.

MISCELLANEOUS FRUITS.

APES.

DOWNY MILDEW (Plasmopara viticola). Extremely dry and hot nditions were experienced throughout the State during spring and mmer and almost no downy mildew development was reported.

BLACK SPOT (Elsinoe ampelina). No reports were received serious black spot infection in early spring. Following rain in nuary, susceptible stocks at the Citrus Experiment Station Narara .C.) were moderately affected.

POWDERY MILDEW (Uncinula necator). Some early infection curred in November on susceptible wine varieties, particularly rmitage, in the Cessnock Area (C.C.) but this was well controlled. liage and fruit infection was noted at Mt. Pleasant (C.C.) in nuary and some late cane infection of Sultanas occurred after rvest in the Lower Murray River area (W.D.).

DEAD ARM (Phomopsis viticola). No evidence of spring fection was reported from Coastal vineyards and the Murrumbidgee rigation Areas where dead arm was in evidence last season. Some ne cankering and fruit stalk infection were noted at Corowa (R.). llowing late summer rain, considerable development of cankers curred on current seasons canes of the variety Grenache in the iffith and Yenda districts (M.I.A.). Cankers were located towards e bases of canes or around periole bases, and caused premature ddening and die back of canes, and death of branches.

BITTER ROT (Melanconium fuligineum) was reported on late nging fruit of an O'Hanez hybrid at the Viticultural Nursery, nwood (M.I.A.). This disease had not previously been corded in the Murrumbidgee Irrigation Areas.

DYING VINES (Cause not determined). In a Molong vineyard ung vines of a number of varieties were found to have died during te spring. The root systems were in a healthy state but the unk at ground level was rotted. A similar disease was reported fecting young Muscat vines at Camden and Chipping Norton (S.C.).

FRUIT ROT (Botrytis cinerea). Very good weather conditions re experienced in wine and dried fruit areas for the fruit harvest riod. As a result a good vintage and a very good yield of high ality dried fruits was obtained. Some moulding of the early turing Zante Currant occurred at Coomealla (W.D.) following owers prior to harvest, but no other losses were reported.

LEAF ROLL (Virus). A serious deterioration of wine rieties at Rooty Hill (M.A.), Pokolbin (C.C.) and Corowa (R.), eviously thought to be Pierce's disease has now been shown to be e to the leaf roll virus. In addition to the districts and rieties previously reported, leaf roll was found affecting Hunter ver Riesling vines in several Griffith (M.I.A.) vineyards, in e case to the extent of 100%.

A MOSAIC (Virus). A vein clearing virus transmissable to e indicator variety Rupestris St. George has been found in vines Chasselas and Tokay from Corowa (R.) and the stock varieties 06 and ARG1 from Griffith Viticultural Nursery (M.I.A.). Its gnificance and relationships are not yet known.

YELLOW VEIN BANDING MOSAIC (Virus) was found on several rieties at Rooty Hill (M.A.) on Grenache at Corowa (R.) Sultana Goodnight and Coomealla (W.D.) and Waltham Cross at Griffith Yenda (M.I.A.).

DECLINE (Cause not known). Deterioration of vines was ed in a large Corowa (R.) vineyard, which was not attributable leaf roll or mosaic. Two conditions were distinguished. The st widespread and important caused a marked deterioration of vine gour and scalding and fall of leaf blades leaving the petiole ering to the cane, and uneven ripening of canes. The varieties ncipally affected were Grand Noir, Balzac, Black Shiraz, Madiera, mitage, Rutherglen Pedro, Pinot Blanc and Frontignac. The cond condition was a premature reddening of foliage of Grand Noir, cante Bouschet and Terega.

RACHITISM (Cause not known) was reported principally on ck Muscat from Pokolbin (C.C.) Orchard Hills (M.A.) Chipping ton (S.C.) and Molong (C.W.S.),

ROOT KNOT (Meloidogyne incognita). A very heavy infestation sed extreme stunting and unthriftiness of 7 year old Hunter River sling vines in sandy light soil at Dalwood (C.C.). The variety nquette in the same area was unaffected and White Shiraz moderately ected. Severe infestation of young Gordo Blanco vines caused nting and poor cropping in a Coomealla vineyard (W.D.).

BLACK MEASLES (Cause unknown). The identity of this ease which was reported last season has been confirmed. Surveys ing the year disclosed that it was widespread on a number of ieties in most districts and had been in part confused with Muscat tle in previous years. At the Coomealla Soldiers Settlement D.) the incidence was rather high on young sultanas in some vine- ds. Severe leaf scalding and fruit fall has occurred.

BUNCH STEM DIEBACK (Cause not known). A serious development this disease occurred in several Molong (C.W.S.) and Mudgee (C.T.) oyards and losses of up to 60% of the crop were experienced.

SALT TOXICITY was reported from vineyards at Pokolbin (C.C.) Rooty Hill (M.A.). Much more severe damage than in previous rs occurred in vineyards in the Coomealla area (W.D.) and in the rumbidgee Irrigation Areas.

BORON TOXICITY was reported on Black Shiraz at Coomealla D.).

HAIL DAMAGE Losses of up to 40% of the crop were experienced a restricted area at Pokolbin (C.C.) following a mid January rm.

BERRY.

LEAF SPOT (Septogloeum mori). Infection was less severe n usual.

BACTERIAL BLIGHT (Pseudomonas mori). Very slight infection occurred this season.

WBERRY.

VIRUS DISEASES. Prevalent as usual.

LEAF DISEASES were for the most part of negligible incidence.

SCORCH (Diplocarpon earliana) was reported as causing severe ge at Mittagong (S.C.) in May.

NEMATODES. The root knot nematode Meloidogyne incognita acrita was identified as the cause of minor galling of roots

of strawberry at Narara (C.C.). Helicotylenchus and Tricholdorus were also present.

WALNUT.

BACTERIAL BLIGHT (Xanthomonas juglandis). Infection was less severe than usual.

FIG. No records.

OLIVE.

BLUE NOSE (Non-parasitic) was reported from a Griffith (M.I.A.) orchard causing slight loss.

ORNAMENTALS.

ALOE (Aloe variegata)

ROOT ROT (Phytopthora sp.) was recorded on this host for the first time at Birchgrove (M.A.).

AZALEA (Rhododendron spp.)

ROOT ROT (various fungi) was responsible for severe losses in azalea plantings around Sydney (M.A.) and in other areas throughout the State during the warm, moist autumn.

LIME INDUCED CHLOROSIS was seen in an azalea showing typical leaf yellowing symptoms from Brunswick Heads (N.C.). There were also several reports from the Sydney Metropolitan Area.

BALSAM (Impatiens sultani)

ROOT KNOT (Meloidogyne sp.) was recorded for the first time on plants growing at Moore Park (M.A.).

BEECH (Fagus sylvatica)

ROOT ROT (Armillaria mellea) killed two trees at Mt. Wilson (C.T.) during the summer. These trees had been planted over 20 years ago in holes from which infected chestnuts had been removed. This is a new record for N.S.W.

BEGONIA (Begonia spp.)

POWDERY MILDEW (Oidium sp.) caused considerable damage to the foliage of Rex begonias at Hascot (M.A.) during the hot, dry summer.

BRUSHBOX (Tristania conferta)

LEAF SPOT (Elsinoe tristaniae) was seen at Roseville (M.A.) during the summer.

SALT TOXICITY caused marginal browning of the leaves of several of these plants growing at Gosford (C.C.). Affected plants had been irrigated with blood washings from an adjacent slaughter yard.

CAMELLIA (Camellia japonica)

LIME INDUCED CHLOROSIS was responsible for leaf yellowing in plants growing in alkaline soil at Goulburn (S.T.)

SALT TOXICITY caused the death of several plants at Murringo (S.W.S.).

LEAF SPOT (Pestolotia guepini) was noted on several plants around Sydney (M.A.) during the summer. It is believed that this fungus may be a secondary invader, colonising only leaf tissue which has been injured by some other cause.

CARNATION (Dianthus caryophyllus)

ROOT ROT (Rhizoctonia solani, Phytophthora sp.) and CROWN ROT (Sclerotium rolfsii) caused severe losses in commercial and home garden plantings around Sydney (M.A.) during the warm summer-autumn period.

WILT (Fusarium oxysporum f. dianthi) was observed at Narrawee (M.A.) and in the surrounding district during autumn causing very severe losses in commercial plantings.

LEAF SPOT (Septoria dianthi) was responsible for severe leaf blighting at Dural (M.A.) and other areas around Sydney (M.A.).

ROOT KNOT (Meloidogyne sp.) caused the decline of carnation plants at Collaroy (M.A.).

Mosaic (Carnation mosaic virus) was prevalent in a commercial planting at Nowra (S.C.).

CASSIA (Cassia sp.)

WOOD ROT (Schizophyllum commune) was recorded for the first time from Baulkham Hills (M.A.).

CHESTNUT (Castanea sativa)

ROOT ROT (Armillaria mellea) took further toll of chestnuts at Mt. Wilson (C.T.) this year. Sudden collapse took place during the dry spring.

CHRISTMAS BUSH (Ceratopetalum gummiferum)

ROOT ROT (Phytophthora cinnamomi) caused heavy losses of plants grown commercially at Castle Hill (M.A.). This is a new record for New South Wales.

CHRYSANTHEMUM

ROOT ROT (Phytophthora cryptogea) caused widespread losses in the Sydney Metropolitan Area after the January rains. Over 50,000 plants were lost by one grower at Milperra (M.A.).

LEAF EELWORM (Aphelenchoides ritzema-bosi) was not evident this year. It is believed that the hot, dry spring provided a natural control of this serious disease.

RUST (Puccinia chrysanthemi) was seen on plants at Valley Heights (C.T.).

GREENING (virus) caused malformation of flowers at Wagga (S.W.S.).

COPROSMA (Coprosma baeuri)

ROOT KNOT (Meloidogyne incognita) was recorded as causing severe root galling at Roseberry (M.A.).

COTONEASTER. (Cotoneaster pannosa)

ROOT ROT (Armillaria mellea) was found to be infecting two plants of this species which collapsed at Mt. Wilson (C.T.) during the dry summer. This is a new record for New South Wales.

DAFFODIL. (Narcissus sp.)

BULB EELWORM (Ditylenchus dipsaci) was responsible for the destruction of approximately 25 per cent of a commercial planting of 15,000 plants at Mt. Wilson (C.T.), despite the regular use of a water soak treatment at 110°F. It maybe that the 3 hour dip is not sufficient and that 4 hours, suggested by European workers, is more desirable, despite a greater loss of flowers. The varieties Fresserve and Lord Roberts were most severely affected.

DAHLIA. (Dahlia sp.)

SPOTTED WILT (Tomato spotted wilt virus) and STUNT (virus) were recorded from several areas throughout the State and in the Sydney Metropolitan Area.

POWDERY MILDEW (Erysiphe cichoracearum), favoured by the dry periods in summer, was prevalent in most dahlia plantings.

DUSTY MILLER. (Centaurea cineraria)

ROOT KNOT (Meloidogyne sp.) was recorded for the first time on this host at Turrella (M.A.).

ENGLISH ELM (Ulmus procera)

LEAF SPOT (Septogloeum ulmi) caused defoliation of some plantings at Mt. Wilson (C.T.) after the late summer rains. Some plantings appeared to show resistance as has been noted previously.

FORSYTHIA (Forsythia sp.)

ROOT ROT (Armillaria mellea) was found infecting two plants showing severe die back at Mt. Wilson (C.T.). This is a new record for New South Wales.

GOMPHOLOBIUM (Gompholobium latifolium).

RUST (Cronartium jacksonii) was recorded for the first time at Kurrajong Heights (C.T.).

GERANIUM (Pelargonium spp.)

BACTERIAL SIEMROT (Xanthomonas pelargonii) was responsible for severe losses in mature plants around the Sydney Metropolitan Area.

BLACKLEG (Pythium spp.) caused heavy losses in cuttings and mature plants in the Sydney Metropolitan Area during the summer and autumn.

RUST (Puccinia pelargonii zonalis) has been widespread throughout the State, infection continuing right through the year.

BACTERIAL LEAFSPOT (Xanthomonas pelargonii) was recorded on an ivy leaved geranium at Ryde (M.A.), the infection being severe. In an unsuccessful effort to control the disease the grower removed infected leaves and sprayed with Zineb at 3 day intervals.

GLADIOLUS.

BACTERIAL SCAB (Pseudomonas marginata) was observed on corms from the Sydney Metropolitan Area.

YELLOWS AND BASAL BROWN ROT (Fusarium oxysporum f. gladioli) was found in corms grown at Bowraville (N.C.), Colinton (C.T.), Wyong (C.C.) and in the Sydney Metropolitan Area.

BLIGHT (Botrytis gladiolorum) caused severe leaf blighting and corm rot in commercial plantings at Castle Hill (M.A.) and Wyong (C.C.).

HARD ROT (Septoria gladioli) was recorded from the Sydney Metropolitan Area and Tea Gardens (C.C.).

GLADIOLUS (CONT'D)

DRY ROT (Sclerotinia Gladioli) was reported from the Sydney Metropolitan Area and Tea Gardens (C.C.).

HAKEA (Hakea • sauvolens)

ROOT ROT (Armillaria mellea) recorded for the first time at the Botanic Gardens (M.A.).

HOLLYHOCK (Althaea rosea)

LEAF RUST (Puccinia malvaccarum) caused severe leaf infection at Berridale (S.T.).

HYDRANGEA

LIME INDUCED CHLOROSIS was seen on plants from Narrabri (N.W.P.).

SALT TOXICITY was reported from Wellington (C.W.S.).

ICELAND POPPY

SPOTTED WILT (Tomato spotted wilt virus) caused leaf and flower distortion in the Sydney Metropolitan Area and Stockton (C.C.).

DOWNYMILDEW (Peronospora arborescens) caused severe losses in a commercial planting at Wyong (C.C.).

IRIS (Iris spp.)

BACTERIAL SOFT ROT (Erwinia caratovora)caused severe rhizome losses in the Metropolitan Area during the autumn.

LEAF SPOT (Heterosporium iridis) was severe during the wet autumn at Mt. Wilson (C.T.).

JAPANESE MAPLES. (Acer spp.)

WILT (Verticillium sp.). Infected trees of A. palmatum showed considerable die-back during the dry periods of summer at Mt. Wilson (C.T.).

This disease was recorded on A. japonicum for the first time in New South Wales although the tree concerned has been infected for many years at Mt. Wilson (C.T.).

KURRAJONG. (Brachychiton populneum)

LEAF SPOT (Cylindrosporium sp.) was prevalent on seedlings planted out at Singleton (C.C.).

LABURNUM. (Laburnum vulgare)

LEAF SPOT (Pleiochacta retosa) caused defoliation as usual after the late summer rains at Mt. Wilson (C.T.).

LIQUIDAMBAR.

SALT TOXICITY was seen at Bathurst (C.T.).

LILAC.

ROOT ROT (Armillaria mellea). Several plants died during the dry summer at Mt. Wilson (C.T.). Although the record is new the plants have been infected for many years.

LIME (Tilea europea)

LEAF SPOT (Cercospora microspora) caused defoliation, as usual, after late summer rains at Mt. Wilson (C.T.). Trees in some plantings, as noted before, appear to be immune.

MOLLIS AZALEA. (Rhododendron sp. - japonicum x molle)

ROOT ROT (Armillaria mellea). A plant which died during the summer at Mt. Wilson (C.T.) was found to be infected with Armillaria mellea. It was growing beside an infected lilac. This is a new record for New South Wales.

MORNING GLORY (Ipomoea cairica)

ROOT KNOT (Meloidogyne javanica) caused severe galling of roots of a plant at Maitland (C.C.).

NASTURTIUM (Tropaeolum majus)

GREENING (Big bud virus) was recorded for the first time from Uranquinty (S.W.S.).

NERINE.

BULB ROT (Sclerotium rolfsii) was prevalent in a hospital garden at Springwood (C.T.) during the late summer. This is a new record for New South Wales.

OLEANDER (Nerium oleander)

BACTERIAL GALL (Pseudomonas savastanoi f. nerii) produced severe stem and leaf disfiguration on a plant from Hay (R.).

ORCHID (Calanthe vestita)

MOSAIC (cucumber mosaic virus) was recorded for the first time on this species at Coff's Harbour (N.C.).

PAEONY.

BLIGHT (Botrytis sp.) was severe as usual, causing collar rot, leaf blight and bud blast on Paeonia officinalis and P. lactiflora varieties at Mt. Wilson (C.T.).

PANSY.

ROOT ROT (Phytophthora parasitica) was recorded for the first time from Grafton (N.C.).

PEPEROMIA.

CROWN ROT (Sclerotium rolfsii) is a new record from the Botanic Gardens (M.A.).

PHLOX.

CROWN ROT (Rhizoctonia sp.) was recorded at Kempsey (C.C.).

POINCETTIA (Euphorbia pulcherrima)

FLOWER BLIGHT (Botrytis cinerea) was recorded for the first time at Taree (C.C.) following wet conditions and strong winds.

PORTUGUESE LAUREL (Prunus lusitanicus)

POWDERY MILDEW (Oidium sp.) was recorded for the first time at Leura (C.T.).

RANUNCULUS (Ranunculus sp.)

POWDERY MILDEW (Erysiphe polygoni) was recorded for the first time at Seaforth (M.A.).

ROSE.

WILT (virus) was observed in commercial rose nurseries at Kellyville, Carlingford, and Glenorie (M.A.) as well as in home gardens around the Sydney Metropolitan Area.

MOSAIC (virus) was seen at Kellyville (M.A.) and Pilliga (N.W.P.) during the summer. It would appear that high temperatures favour mosaic symptom expression.

BLACK SPOT (Diplocarpon rosae) was reported from several home gardens, as well as rose nurseries around the Sydney Metropolitan Area during the summer and autumn.

POWDERY MILDEW (Sphaerotheca pannosa)caused severe leaf distortion in plantings around the Sydney Metropolitan Area.

CANKER (Coniothyrium fuckelii) was recorded at Kellyville (M.A.). Canker developed at the base of the growth from the bud in callus tissue, probably weakened by frost. The stock was unaffected.

FASCIATION was exhibited by flower heads submitted from Graman (N.W.S.). 5 - 8 normal buds developed from within a dying flower, there being no evidence of greening of the floral parts. Since there appeared to be some spread of this disease the possibility of virus infection will be further examined.

SALT TOXICITY was responsible for leaf browning at Bourke (W.D.) and Meryula (W.D.).

SHASTA DAISY (Chrysanthemum sp.)

LEAF SPOT (Septoria sp.) caused severe leaf and stem spotting in a home garden at Mosman (M.A.).

SNAPDRAGON.

RUST (Puccinia anthirrhini) was not so prevalent as in past seasons, probably because of a great decrease in the amount of antirrhinums planted since the outbreak of rust in 1952.

CROWN ROT (Sclerotinia sclerotiorum) was responsible for moderate losses in plants grown for seed at Dundas (M.A.) during the spring-summer.

STOCK.

BLACKROT (Xanthomonas incanae) was prevalent in some commercial plantings around Gosford (C.C.) where hot water treatment of the seed had not been practicised. Autumn infections were also seen in home gardens and some commercial plots around the Sydney Metropolitan Area.

CROWN ROT (Sclerotinia sclerotiorum) caused a 50 per cent infection in a planting at the Botanic Gardens (M.A.) in the spring. Infection occurred mainly through the lower flowers.

WILT (Verticillium sp.) caused an 85 per cent loss in a commercial planting at Blacktown (M.A.).

SWEET PEA.

POWDERY MILDEW (Erysiphe polygoni) was reported from several areas in the Sydney Metropolitan Area.

WILT (Vascular wilt virus of broad bean) affected 50 per cent of plants in some crops in the Sydney Metropolitan Area.

TI-TREE (Leptospermum lambethii)

ROOT ROT (Phytophthora cinnamomi) was recorded for the first time in New South Wales, causing considerable losses of advanced plants grown in tins at a St. Ives (M.A.) nursery.

WINTER ACONITE (Eranthis hiemalis)

LEAF SMUT (Urocystis eranthidis) was recorded for the first time at Mt. Wilson (C.T.).

WATTLES.

Acacia baileyana.

STEM GALL (Physalospora acaciae) was observed causing severe galling at Quirindi (N.W.S.).

Acacia melanoxylon

ROOT ROT (Armillaria mellea). It was noticed that infection by Armillaria mellea is widespread on this species at Mt. Wilson (C.T.). Abundant fruiting bodies appeared in the autumn and it is thought that infected roots from this host may be largely responsible for the prevalence of this disease on cleared land.

VEGETABLES.

ASPARAGUS.

WILT (Fusarium sp. associated) was recorded from Gundagai (S.W.S.). Plants in the field were seen to be yellowing from the tips back and tending to wilt. In some cases, the vascular tissue at the base of the stem and in the roots and crown was seen to be discoloured and a species of Fusarium was isolated. Tests to determine if this fungus is responsible for the disease are at present being carried out.

BEAN, FRENCH.

BEAN SEED CERTIFICATION SCHEME. In co-operation with the Division of Plant Industry, the Bean Seed Certification Scheme continued for the fifteenth successive season. Of 155 crops inspected, 129 were passed for certification. The majority of these were of the variety Brown Beauty with smaller numbers of Hawkesbury Wonder, Tweed Wonder and Windsor Longpod. Four crops of stringless bean varieties were also certified this season. Of the 36 crops rejected for certification, 10 were rejected for the presence of anthracnose and 1 because of halo blight.

ANTHRACNOSE (Colletotrichum lindemuthianum) was recorded from all coastal bean growing areas during the past year and was also found in several lots of beans arriving at the Sydney Municipal Markets from the North Coast of N.S.W. and from Queensland. An outbreak of anthracnose in a few plants of a crop of Vickery strain Brown Beauty at Bega (S.C.) was investigated in some detail. It was found that the race of anthracnose present was Aust.6, to which the Vickery strain of Brown Beauty is resistant, and it was thus suspected that this line of Vickery strain had become contaminated with a susceptible strain of Brown Beauty. Inoculation tests on several hundred single plant selections have shown so far that several lines of Vickery strain are contaminated, some showing as many as 30 per cent of susceptible individuals. Testing work on cross-bred material from Emeritus Professor W.L. Waterhouse is continuing and several lines obtained from Dr. O. Norvell of California have also been tested. Some of these latter lines are wild Phaseolus vulgaris from Mexico and neighbouring countries and appear to be quite immune to the races with which they have so far been tested. They appear to be very promising breeding material as it is thought that they are also highly resistant if not immune to halo blight and rust.

Work has also continued on the intravarietal variations in anthracnose reactions of several bean varieties. Several varieties have been found to contain lines varying considerably in their anthracnose reaction. Details of this work will be published elsewhere.

HALO BLIGHT (Pseudomonas medicaginis var. phascolicola) was not nearly as severe this year as last season, most probably because of the drier spring and summer. Small outbreaks were reported at Gosford (C.C.) in the spring and quite a severe outbreak occurred at Richmond (M.A.) and at Wentworth (W.D.) in the autumn. This latter outbreak was favoured by the close proximity of several bean crops and the use of overhead sprinkler irrigation.

RUST (Uromyces phaseoli typica) was present to a small extent in most bean crops during the autumn but was not very severe, probably because of the dry season.

BACTERIAL BROWN SPOT (Pseudomonas syringae) was very severe in spring-grown crops in the Gosford (C.C.) district. Plants were attacked at about flowering time and quite severe leaf

damage was caused. Subsequent dry weather slowed down the spread of the disease and allowed quite good crops to be taken.

OTHER DISEASES recorded this year were POWDERY MILDEW (Oidium sp.) causing leaf drop and pod russeting at Moree (N.W.P.). This disease had not been recorded in New South Wales previously,

SCLEROTIUM STEM ROT (Sclerotium rolfsii) was quite severe in spring beans in Central and North Coastal areas, being favoured by the warm comparatively dry weather. SCLEROTINIA STEM ROT (Sclerotinia sclerotiorum) was reported from Port Macquarie (C.C.) Yanco (M.I.A.) and Wentworth (M.D.) and LEAF SPOT (Ascochyta sp.) caused severe leaf damage to stringless bean crops at Cornwallis (M.A.).

BEAN, BROAD.

VASCULAR WILT (Broad bean vascular wilt virus) was quite severe in several crops in the Sydney Metropolitan Area during the autumn and was also recorded on the weed host Bidens pilosa from several places.

FROST INJURY (Non-Parasitic) caused severe damage to spring broad bean crops at Molong (C.W.S.). Late frosts in September, 1957 caused the main damage.

BEETROOT AND SILVER BEET.

BEET NEMATODE (Heterodera schachtii). During the year, a survey was carried out on the property at Milperra (M.A.) on which the parasite was recorded on beetroot in 1953. The survey showed that a slight downhill movement of the nematode had taken place from the area which was found to be infested in 1956. There was an increase in the soil population of viable cysts in some previously infested raised beds but the parasite had apparently disappeared from other sections of the property.

The property concerned has now ceased to be a market garden, having been sold to industrial interests. No further outbreaks of beet nematode disease have been recorded in New South Wales.

LEAF SPOT (Cercospora beticola) caused slight damage in home garden plantings during summer but was of no consequence in commercial plantings.

RUST (Uromyces betae). A disease of rare occurrence in this State, was found to be severely affecting a crop of silver beet at Revesby (M.A.) in October.

ROOT KNOT (Meloidogyne sp.) caused some reduction in a crop of silver beet at French's Forest (M.A.) last spring. Meloidogyne incognita caused moderate damage to beetroot at Griffith (M.I.A.).

CARROT.

ROOT KNOT (Meloidogyne hapla and Meloidogyne incognita) was recorded on plants from the Murrumbidgee Irrigation Areas. The record of Meloidogyne hapla on carrots was the first on this host in New South Wales, though it has probably been present and classified as Heterodera marioni for many years. The infestation was heavy and roots were severely galled.

MOTLEY DWARF (Virus) was recorded on carrots from Richmond (M.A.) during the autumn.

CELERY.

No celery diseases were recorded in New South Wales during the past year.

CRUCIFERS.

CLUB ROOT (Plasmodiophora brassicae) was again of importance in cauliflower and cabbage crops at Richmond and Windsor (M.A.), particularly in the early planted crops. Up to 20% loss was recorded in individual crops in this area. One grower at Richmond obtained complete control of severe club root infection by dipping the roots of cauliflower seedlings in a 4% Calomel talc slurry prior to transplanting into infested soil.

The disease was recorded for the first time in this State on brussel sprouts at Mt. Colah (M.A.). Moderate loss was sustained in the crop concerned.

WIRE STEM and STEM ROT (Rhizoctonia solani) caused greater than the usual damage to crucifer crops during the autumn, the disease being encouraged by high temperatures. A severe loss of cauliflower and cabbage plants occurred at Georgica (N.C.) and 30% loss was recorded in cabbages at Kyogle (N.C.) and a 10% loss at Rockley (C.T.). In the Richmond-Windsor Area (M.A.) a 5-10% overall loss occurred.

BLACK ROT (Xanthomonas campestris) caused slight damage to cauliflowers in a vegetable trial ground at Dundas (M.A.). The disease had started as a seed infection in the Snowball variety and had spread to nearby plants of the Hawkesbury Solid White variety. Black rot was also recorded on cauliflower at Kempsey and Macksville (N.C.) and Orange (C.T.) and on cabbage at Maitland (C.C.) and moderate damage occurred in crops of rape and kale at Gloucester (C.C.).

BLACK RING (Cabbage black ringspot virus) was recorded for the first time in New South Wales on broccoli, cabbage and cauliflower at Dundas (M.A.) in July. The affected plants were growing in a commercial vegetable trial ground. Three varieties of broccoli were being grown and all were affected. Necrotic ringspot development was most severe on the "Waltham No.29" variety and lesions were evident on the youngest leaves. A number of the outer leaves of infected plants of this variety had abscissed at the time the plants were inspected. The outer leaves of plants of the "Morse Medium" variety were less severely affected and abscission had not occurred. The outer leaves of the "Morse Early" broccoli variety were very lightly affected, and the disease did not appear to affect the vigour of the two latter varieties. Practically 100 per cent of the plants of the three varieties were infected.

The effect of the disease on "Shorts" cauliflower and "Enkhuizen Glory" cabbage was of the same order of severity as on "Morse Early" broccoli. About 1 per cent of the cabbage and cauliflower plants were affected.

The origin of the infection is somewhat obscure. The broccoli plants had been heavily parasitized by the slaty grey aphid (Brevicoryne brassicae) which could have transmitted the virus from an undetermined host plant. It is possible that the virus has been present locally for some time and, if the effect produced on "Shorts" cauliflower or "Enkhuizen Glory" cabbage was an indication of its usual severity on these two hosts the disease could have been overlooked in the past.

BLACK ROOT OF RADISH (Aphanomyces raphani) caused a 100 per cent loss in a 2 ac. crop of "Long Scarlet" radish at Menai (M.A.) and moderate damage at Caringbah (M.A.). At Milperra (M.A.) where the disease had caused heavy loss over the past 2-3 years a small control trial was laid down in January 1958. The results of the trial indicated that "Vapam 48" applied to infested soil

at the rate of 100 gallons per acre two weeks prior to planting substantially reduced infection. Plants in the Vapam treated plots averaged 38.4 per cent infection compared with 98.4% infection in the untreated plots. In the same trial, plants in plots treated with Pentachloro nitrobenzene at the rate of 90 lb. active ingredient per acre averaged 78.5 per cent infection.

DOWNY MILDEW (Peronospora parasitica) was present as usual during the early autumn in crucifer seedbeds in the Kyogle district (N.C.) and, this year, prolonged showery and humid weather encouraged severe damage by downy mildew in cauliflower and cabbage seedbeds in that locality.

Cabbage seedlings severely damaged by downy mildew were received from a nursery at Enfield (M.A.) in early winter.

LEAF SPOTS (Alternaria brassicicola and A. brassicae) were present in some crops but were not responsible for significant reduction in yield. A. brassicae caused moderate damage to horse-radish plants at Oberon (C.T.).

BORON DEFICIENCY caused a 10 per cent loss in 18,000 cauli-flower plants at Woodville (C.C.) and was also severe in specimens of cauliflower plants submitted from Bolwarra (C.C.).

WHIPTAIL (Molybdenum deficiency) caused some reduction in a cauliflower crop at Woy Woy (C.C.).

WEATHER DAMAGE resulted in some reductions in yield of both cabbage and cauliflower plants. Tipburn of the inner leaves resulting from high autumn temperatures, and riciness and premature opening of cauliflower curds was of frequent occurrence in the Sydney Metropolitan Area and was also instanced at Cardiff (C.C.) and Singleton (C.C.). FROSTING caused a 90 per cent crop failure in a cauliflower crop at Orange (C.T.) and was also evident in specimens of cauliflower and cabbage submitted from Bathurst (C.T.) and Tamworth (N.W.S.) in the late winter of 1957.

CUCURBITS.

FUSARIUM WILT OF ROCKMELON (F. oxysporum f. melonis). This disease was of major importance on rockmelons at Griffith (M.I.A.) during the late spring and early summer although it had not been previously recorded in that area. The fungus attacked seedlings resulting in a "damping off" and up to 60 per cent loss was recorded in seedlings during October and November, with 20 to 40 per cent losses being recorded in a number of plantings. Because of the depredations of the disease most early plantings had to be resown three or four times before a satisfactory stand was obtained with losses becoming less as the season progressed. Over 50 per cent more seed was sold to growers in the Griffith area than in the previous year because of the necessity of replanting. The wilt resistant variety Delicious 51 has not proved agronomically adaptable to the Murrumbidgee Irrigation Areas and further breeding work will be necessary to combat the disease in that area.

Fusarium wilt also caused moderate loss in a ½ acre crop at Moorebank (M.A.) in November.

FUSARIUM WILT OF WATERMELON (F. oxysporum f. niveum) caused significant loss at Macksville (N.C.) during early summer. In the planting concerned the "Congo" variety was practically wiped out by the disease and there was a high percentage of wilt in the variety "Candy Red". However, the "Hawkesbury Wilt Resistant" variety showed its usual high field resistance.

POWDERY MILDEW (Erysiphe cichoracearum). This disease appeared on many cucurbit crops in the Sydney Metropolitan Area

towards the end of January and was present throughout the remainder of the growing season. However, no cases of severe economic loss were reported.

BLOSSOM END ROT AND FAULTY POLLINATION of watermelons constituted an economic loss during the hot, dry summer months. Blossom end rot caused a 95 per cent loss in a watermelon crop at Inverell (N.S.P.) and also significant losses at Tamworth (N.W.P.), and Maitland (C.C.). On the Murrumbidgee Irrigation Areas both blossom end rot and the effects of faulty pollination were observed from the second fruit setting in mid December till the time of maturity of the crops. The trouble was evident in most watermelon plantings throughout the Murrumbidgee Irrigation Areas. Up to 70 per cent losses were recorded in individual crops.

SALT TOXICITY was responsible for significant reduction in the yield of pumpkins, rockmelons and cucumber crops on the Murrumbidgee Irrigation Areas and the Murray River (R.) vegetable growing area. In a number of instances the plants had scalded off prematurely and high salt concentrations were recorded in individual plantings. Hot dry weather had resulted in the movement of salt to the surface of the soil.

?SQUASH MOSAIC. (?Squash Mosaic Virus). A disease of squash, marrow and pumpkin similar in many respects to the described overseas as Squash Mosaic was observed during the year at Milporra and Cornwallis (M.A.). At Milporra, two ¼ acre plantings of "Melbourne White Running" marrow showed 70 and 5 per cent infection respectively in late January. This had increased to practically 100 per cent in early March at which time a nearby planted crop of "White Bush Scallop" squash was also severely affected. At Cornwallis 40-50 per cent infection was present in crops of "Queensland Blue" and "Richmond Black" pumpkin and "White Bush" marrow in April. Tests are being undertaken to establish the identity of the disease.

Other diseases recorded on cucurbit crops during the year were FUSARIUM FOOT ROT (F. solani f. cucurbitae) which killed 50 per cent of a pumpkin planting at Kyogle (N.C.) and was also recorded on squash in the Sydney Metropolitan Area. ANTHRACNOSE (Colletotrichum lagenarium) caused heavy loss in a consignment of Honey Dew rockmelons produced at Griffith (M.I.A.) in association with PENICILLIUM ROT (Penicillium sp.) and ALTERNARIA ROT (Alternaria sp.). Anthracnose was also recorded on rockmelons at Goodnight (R.). ROOT KNOT (Heloidogyne sp.) caused moderate loss in a glasshouse cucumber crop at Hay (R.) and severely damaged a rockmelon crop at Wyong (C.C.). M. incognita caused very severe damage to pumpkins at Griffith (M.I.A.). MOLYBDENUM DEFICIENCY caused some reduction in a rockmelon crop at Maitland (C.C.).

LETTUCE.

MOSAIC (Virus) was widespread during the spring and early summer months. Records came from all over the state and the disease was especially severe at Maitland (C.C.), Griffith (M.I.A.) and in the Sydney Metropolitan Area. At Maitland, several spring crops produced a very high percentage of unmarketable heads but later crops were practically free of the disease.

SPOTTED WILT (Virus) caused losses of up to 10 per cent in lettuce crops at Mona Vale (M.A.) and Griffith (M.I.A.), during the autumn and winter. At Griffith, the disease has been seen on some properties for the last two years. Some affected heads were showing secondary rotting caused by soft rot bacteria.

OTHER DISEASES recorded were BOTTOM ROT (Sclerotinia spp.) which caused 15 per cent loss in a crop at Tamworth (N.W.S.) and LEAF SPOT (Septoria lactucae) which attacked the outer leaves of plants in crops at Newcastle (C.C.) and Wollongong (S.C.).

MUSHROOM - CULTIVATED STRAIN.

NEMATODES. A number of records were made of nematodes infestation of both indoor and outdoor mushroom beds in the Sydney Metropolitan Area during the autumn. Where heavy infestation of the compost had occurred, the spawn had practically disappeared and production of mushrooms had ceased after the first or second flush.

Two genera of nematodes were found in the composts examined - Ditylenchus and Rhabditis. Ditylenchus was detected on four occasions, at George's Hall and in compost submitted from Blacktown, Kemp's Creek and Carlingford. At George's Hall, heavy loss of production had occurred in 50 per cent of 17,000 square feet of indoor beds. The affected section of the beds were located near the doors of the sheds. At Blacktown some 300 square feet of indoor beds had produced less than ¼ lb. of mushrooms per square foot and at Kemp's Creek the infestation had occurred in outdoor ridge beds which had not produced mushrooms after the second flush. At Carlingford production was cut by two thirds to three quarters.

Large numbers of nematodes of the genus Rhabditis were associated with the failure of 4,000 square feet of outdoor ridge beds at Maraylya and also with 100 per cent loss in sections of flat beds at Granville.

A few nematodes have often been detected in mushroom beds but this season has been the first occasion in this State in which a high population of nematodes in the compost has been found associated with heavy yield losses. No control measures such as peak heating had been taken by the growers concerned, and it is thought that unusually high autumn temperatures had encouraged multiplication of the eelworms in the compost.

OTHER DISEASES. Fungal diseases and competitors generally contributed little to yield reduction during the year. TRUFFLE (Dichliomyces microspora) was slightly troublesome in early autumn and there was one record of BUBBLES (Mycogone perniciosa), one record of the MUSHROOM BED SCLEROTIUM (Xylaria vaporaria) and also one record of the BROWN PLASTER MOULD (Myriococcum praecox), all from the Sydney Metropolitan Area.

ONION.

WHITE ROT (Sclerotium cepivorum) caused the complete loss of seedlings of several varieties of onions in a large seedbed area at Bathurst (C.T.). The land used had never been cultivated and the way in which it became so heavily contaminated with this disease is not known. However, it was adjacent to an area in which onions are grown and the possibility of onion trash affected with white rot being dumped on the land has not been excluded. Severe damage was also caused to several crops in the Newcastle (C.C.) district.

ROOT ROT (Undetermined) of onion seedlings was reported from Lithgow (C.T.) and Mittagong (S.T.). Several of the roots were showing a pink colouration and a fungus has consistently been isolated. It is suspected that the disease may be pink root, caused by pyrenochaeta terrestris, which has not been recorded in New South Wales and pathogenicity tests are at present being carried out to test this hypothesis.

ONION.(CONT'D)

SUNSCALD (Non - parasitic) caused quite severe damage to onion bulbs harvested during the summer at Griffith (M.I.A.) and Dareton (W.D.). The weather at harvest time was very hot and dry and considerable scalding occurred. In many cases, this was followed by secondary soft rot of the bulbs in storage.

PARSNIP.

ROOT KNOT (Meloidogyne hapla). This pathogen was identified in parsnip for the first time in this State from Griffith (M.I.A.).

PEA.

FOOT ROT AND LEAF SPOT (Mycosphaerella pinodes) was very severe in pea crops during the autumn of 1958. Crops from the North, Central and South Coast divisions and from the Murrumbidgee Irrigation Areas, were severely damaged and in several cases it was estimated that yields were reduced by more than 50 per cent. The recently introduced New Zealand variety "99 " appeared to be particularly susceptible but severe infection was also recorded in crops of Greenfeast, Gem and other varieties.

MOSAIC (Virus) was prevalent in many North Coast crops this season, causing stunting and distortions in affected plants and a consequent reduction in yield.

POWDERY MILDEW (Oidium sp.) caused damage to coastal pea crops during the dry autumn of 1958.

LEAF SPOTS caused by Ascochyta pisi and Septoria pisi caused slight leaf damage to pea crops at Taree (C.C.) and Tallong (S.T.).

PEPPER.

ANTHRACNOSE (Colletotrichum spp.) was recorded on pepper fruits from Grafton (N.C.). Two distinct species of Colletotrichum were concerned and are being investigated in more detail.

POTATO.

LATE BLIGHT (Phytophthora infestans) was of no economic importance this year. Testing work on the reaction of this Department's seedlings to the "O" race of the fungus has been continued. This year's tests showed that a number of seedlings derived from the U.S. varieties Cherokee and Pungo and the Scottish seedling 914a(91) were immune to the "O" race.

LEAF ROLL (Potato leaf roll virus). For the third successive year no crops submitted for certification were rejected because of excess leaf roll content and for practical purposes the disease has been eliminated from certified potato seed produced in this State.

POWDERY DRY ROT (Fusarium trichothecioides) caused serious economic losses in consignments of certified seed potatoes produced at Crookwell (S.T.) in the late autumn and winter of 1957. Losses were reported from most of the areas in the State to which seed from Crookwell had been consigned.

The principal losses were sustained in seed purchased by growers at Richmond and Windsor (M.A.). Here, some 1100 bags of potatoes showed varying proportions of dry rot infection ranging

POTATO. (CONT'D)

in individual lots from 2 to 80 per cent with an average of some 22 per cent. Reports and estimates of losses in Crookwell seed potatoes in other parts of the State ranged from 8 - 10 per cent to a "considerable quantity" with an average of some 20 - 25 per cent.

The infection occurred in the two principal varieties grown for the coastal market viz:- Sebago and Sequoia. No losses were reported in any other varieties produced at Crookwell.

It is considered that the following factors had operated to produce the unprecedented development of the disease.

1. The autumn of 1957 at Crookwell was unusually warm and there was an absence of the killing frosts which are expected to occur in April and May and this resulted in a comparative immaturity of the tuber skin particularly in the early dug potatoes.

2. The tubers were injured by mechanical diggers and during subsequent handling and grading operations permitting entrance of the pathogen. Most of the potatoes were harvested with mechanical diggers and these included all lots which showed greater than 20 per cent powdery dry rot infection. Less than 10 per cent infection was present in any consignments which had been fork dug.

3. The rate of healing over of cut or injured tuber tissue was too slow to prevent entry of the fungus.

The lack of proper storage facilities which would expedite suberization and the consignment of tubers within the shortest possible time after digging did not permit the detection of infected tubers at Crookwell but the disease developed more rapidly under the warmer coastal conditions.

RUGOSE MOSAIC (Potato virus X and Potato virus Y). For the first time in many years this disease was responsible for the rejection of crops from certification. Two crops were rejected. 2 acres of Walanga at Blayney (C.T.) contained 20 per cent infection and 1 acre of late Ashworth at Oberon (C.T.) contained 15 - 20 per cent infection. Infections of the order of 1 per cent were detected in other crops of Walanga submitted for certification at Blayney, and Oberon. 20 per cent infection was also present in a crop of Walanga at Mt. Irvine (C.T.).

In view of the high susceptibility of the Walanga variety to rugose mosaic and also its tolerance to the disease it is considered to represent a hazard to the Potato Seed Certification Scheme and the variety will no longer be accepted for certification in New South Wales.

EARLY BLIGHT (Alternaria solani) was present in the Department's potato plots at Red Range (N.T.) in February where it had caused severe damage to the foliage of the varieties Plymouth and Pungo and the seedlings 2079 ab (7) and 835a(4) x Adina. Moderate damage was caused to the seedling 1591b(9) and slight damage to Sebago and the seedlings 835a(4)x11-79, S2540 x Cortland, Monak x 11-79 and 1928c(2).

At Oberon (C.T.) early blight caused damage to potato crops in late summer. A severe infection of Walanga was the heaviest attack yet observed on this variety and would have substantially reduced the ultimate yield. The leaves of a nearby Sebago crop were also heavily blighted. Light to moderate infection was also present on other crops of Sebago and Walanga at Oberon, but no infection was observed on Adina and Exton in this area.

POTATO. (CONT'D)

Early blight was also present in crops at Crookwell (S.T.) to a greater extent than usual particularly on the Saranac variety and a 50 per cent reduction in yield as a result of early blight attack was reported from Anembo (S.T.).

BLACK LEG (Erwinia carotovora). At Red Range (N.T.) a crop of Sebago was rejected from certification because of a 70 per cent blackleg content whereas crops of Katahdin, Crana and Walanga in the same area contained less than 0.5 per cent of the disease. At Blayney (C.T.) a crop of Sebago was rejected because of 3 per cent blackleg content and again other varieties were almost free of infection. At Oberon (C.T.) a 2 per cent infection occurred in that section of a Sebago crop planted with cut seed but there was no infection in the remainder of the crop planted with uncut seed. A crop of Sequoia was rejected at Crookwell (C.T.) for excess blackleg infection.

A 25 per cent loss was also recorded in a crop at Kyogle (N.C.) in the autumn.

PURPLE-TOP WILT (Tomato big bud virus). Less than 1 per cent of this disease was present in crops on the Northern Tablelands. On the Central Tablelands a 2-3 per cent infection had developed at Oberon, Sunny Corner and Kelso at the time of the second certification inspection although less than 1 per cent purple-top wilt was present at Blayney and Orange (C.T.) and the disease was of no consequence at Crookwell (S.T.). 90 per cent of a 4 acre crop of Factor at Taree (C.C.) was infected in the autumn.

ROOT KNOT NEMATODE. (Meloidogyne incognita) affected 50 per cent of the tubers produced in a 5 acre crop at Acacia Plateau (N.C.) in March. Infection by Meloidogyne sp. was responsible for the rejection from sale of a 10 ton consignment of potatoes from Robertson (S.C.) in March and tubers from this locality were again rejected in June because of nematode infestation. At Cornwallis (M.A.) where flood waters had previously deposited quantities of sand on land where potatoes were grown last spring, heavy nematode infection occurred particularly in late harvested varieties.

BROWN ROT (Pseudomonas solanacearum) caused 50 per cent loss in a crop of Sidina and Factor varieties at Yarrowitch (N.T.) and a loss of 500 bags out of 1900 at Hernani (N.T.). It was stated that the disease was general throughout the Hernani area.

BROWN FLECK (Non parasitic). This disease was severe in early dug potatoes at Glen Innes (N.T.) but later crops were less affected. Most of the affected tubers had been produced on granite or red basalt soil with pH of 5.4 to 6.0. The crops were dry from planting till late December when good rains occurred. The Sebago variety appeared to be the most severely affected.

COMMON SCAB (Streptomyces scabies) was present to some extent on both the Central and Southern Tablelands but did not cause appreciable damage.

RHUBARB.

Rhubarb plantings were generally free of disease during the year. DOWNY MILDEW (Peronospora jaapiana) caused severe defoliation in commercial crops at Castle Hill and Wentworthville (M.A.) and was present in trace amounts in some other crops in the Sydney Metropolitan Area. LEAF SPOT (Phyllosticta straminella) was also recorded on some crops in the coastal area of the State

SHALLOT.

DOWNY MILDEW (Peronospora destructor) caused severe damage to shallots in a home garden at Wauchope (C.C.).

SWEET POTATO.

SCURF (Monilochaetes infuscans) was recorded from Wamberal (C.C.) damaging about 20 per cent of the tubers in a crop.

TOMATO.

SPOTTED WILT (Spotted wilt of tomato virus) no reports of serious economic loss due to spotted wilt were received during the year. The disease, however, was widespread and appears to be more prevalent than for some years. It was recorded on the Murrumbidgee Irrigation Areas, at Ourimbah, Gosford and Somersby (C.C.) and at Tamworth (N.W.S.), Manilla (N.E.), Coonabarabran (N.W.P.), Lismore (N.C.) and in the Sydney Metropolitan Area.

YELLOW TOP (Yellow top of tomato virus) was widespread in Central coastal areas but was of minor importance; the only records of serious incidence being 66 per cent of a crop of 3,000 plants at Warriewood (M.A.) in January and 75 per cent of 2,000 plants at Sawtell (N.C.) in August.

EARLY BLIGHT (Alternaria solani). As usual early blight was prevalent in autumn crops. Serious attacks were reported from Mangrove Mountain and Wyong in the Gosford (C.C.) district in March as well as from Maitland (C.C.). In September-November the disease caused losses in the North Coast in the Bellbrook, Bonville, Bowraville and Murwillumbah areas.

In the autumn, lesions on the leaves were atypical having indefinite watersoaked margins without trace of surrounding chloritic tissue.

FUSARIUM WILT (Fusarium oxysporum f. lycopersici) caused losses in glasshouses at Warriewood (M.A.) and Dareton and Menindee (W.D.). Some losses occurred in Rouge de Marmande in the Sydney Metropolitan Area and at Nambucca Heads (N.C.). Heavy losses occurred in a crop of 2,000 Grosse Lisse which became waterlogged at Gosford (C.C.) and, also in Grosse Lisse, at Soldiers Point (C.C.) which were badly affected with root knot.

BACTERIAL SPOT (Xanthomonas vesicatoria). The season apparently was not conducive to the development of bacterial spot. However, some losses occurred on the far North Coast at Lismore and Murwillumbah in the autumn of 1957.

BACTERIAL CANKER (Corynebacterium michiganense). This disease was widespread and caused the most serious losses experienced since the early nineteen forties. Very heavy losses were recorded generally in the Murwillumbah (N.C.) district. 75 per cent of a crop of 3,000 plants was lost at Culcairn (S.W.S.), a crop was "wiped out" at Bowraville (N.C.) and losses of 10-15 per cent were recorded at Bathurst (C.T.), Coonabarabran (N.W.P.) and at numerous localities in the Sydney and Newcastle Metropolitan Areas.

BACTERIAL WILT (Pseudomonas solanacearum). A few cases of bacterial wilt were observed but no serious outbreaks were reported.

ROOT & COLLAR ROTS. Root rot caused by Phytophthora cryptogea was observed in isolated glasshouses in the Warriewood-Mona Vale (M.A.) district and also from Menindee (W.D.).

TOMATO. (CONT'D)

Rhizoctonia solani caused some losses at Griffith (M.I.A.), Mangrove Mountain (C.C.) and at Macksville and Lismore (N.C.).

STEM BLIGHT (Sclerotinia sclerotiorum) was very prevalent in the Valla (N.C.) district in May and June.

ROOT KNOT (Meloidogyne spp.) M. incognita var. acrita and M. javanica were isolated from root knot lesions, on tomato during the year. The disease was widely distributed on light soils on the coast and was particularly severe in a crop at Soldier's Point (C.C.) where soil had been treated with dieldrin at the rate of one gallon per acre. Reports of root knot were also received from Grafton and Mullimbimby (N.C.), Cardiff (C.C.), Bathurst (C.T.) and Yenda (M.I.A.).

BLOSSOM END ROT (Non parasitic). This disease was very widespread and caused serious losses from December to April. Very serious losses were observed in light sandy soils in the Gosford, (C.C.) district. Blossom End Rot was also reported to be severe at Murwillumbah (N.C.), Goulburn (S.T.), Kempsey and Coff's Harbour (N.C.) and in the Sydney Metropolitan Area.

HEAT SCALD (Non parasitic) was widespread in coastal areas.

BROWN WALL (Non parasitic) was prevalent in many areas including Kempsey, Kyogle and Lismore (N.C.), Bathurst (C.T.) and the Metropolitan Area. At Lismore where Red Cloud and Grosse Lisse were growing side by side, the former variety was seriously affected while the latter was almost free of the disease.

BIG BUD (Big bud of tomato virus) was reported as usual from inland areas but was restricted to a 2 or 3 per cent incidence.

DROP HEAD WILT (Virus) was present in several glasshouses in the Mona Vale - Warriewood (M.A.) district and caused 70 - 80 per cent losses in a few individual houses.

STREAK (Virus) was present in several glasshouses in the Mona Vale - Warriewood (M.A.) area and was also reported in the field at Yanco (M.I.A.) and Tumut (S.W.S.).

MOSAIC (Tobacco mosaic virus) was severe in variety trials at the Yanco Experiment Farm (M.I.A.) and in one crop at Kulnura (C.C.). It was also reported from Gosford and Wyong (C.C.). At Murwillumbah (N.C.) a leaf distorting strain caused severe losses in one crop. As usual, it was almost universal in glasshouses in the Sydney Metropolitan Area.

MISCELLANEOUS PLANTS.

BATHURST BURR (Xanthium spinosum)

STEM ROT (Sclerotinia sp.) was recorded from Merriwa (C.T.).

BLACK BERRIED NIGHTSHADE (Solanum opacum)

LEAF SPOT (Alternaria solani) was recorded on this host for the first time in New South Wales at Oberon (C.T.). The infected plants were growing in a crop of potatoes infected with A. solani.

FIREWEED (Senecio lautus)

RUST (Puccinia tasmanica) was recorded from Branxton (C.C.). The infected plants were a mass of aecia and it seemed certain that they would be killed by the disease.

WHITE RUST (Albugo tragopogonis) was reported to be very severe in the Richmond River area (N.C.).

TREE TOBACCO (Nicotiana glauca)

LEAF and STEM SPOT (Ascochyta sp.) was severe in the Hillston (R.) district and was reported to have caused the death of many plants.

NEW PLANT DISEASES.

During the twelve months ending 30th June, 1958, the following diseases were recorded for the first time in New South Wales.,

Acacia melanoxylon (Blackwood).- Armillaria mellea (Vahl.) Quel. (Root rot); Mt. Wilson.
Acer japonicum (Japanese maple).- Verticillium sp. (Wilt and die-back); Mt. Wilson.
Acroclinium roseum.- Verticillium dahliae Kleb; Maryong.
Agarius hortensis (Cultivated mushroom).- Ditylenchus destructor Thorne (infesting mushroom compost); this eelworm was found on four occasions in mushroom compost, associated with spawn destruction and severe yield reduction. It was possibly encouraged by unusually high autumn temperatures.
Aloe variegata (Variegated aloe).- Phytophthora sp. (Root rot); Birchgrove (Sydney Metropolitan Area).
Beta vulgaris var. cicla (Silver beet).- Centrospora acerina (Hartig) Newhall (Leaf Spot); Mascot (Sydney Metropolitan Area) 1956.
Brassica oleracea var. botrytis (Cauliflower and broccoli).- Turnip mosaic virus (Black ring); Dundas (Sydney Metropolitan Area). This disease was seen on a number of cruciferous vegetables in a commercial trial ground. The origin of the outbreak is not known but could have originated on weed hosts and been transmitted by the slaty grey aphid (Brevicoryne brassicae), with which the broccoli was heavily infested.
Brassica oleracea var. capitata (Cabbage).- Turnip mosaic virus (Black ring); Dundas (Sydney Metropolitan Area).
Brassica oleracea var. gemmifera (Brussels sprouts).- Plasmodiophora brassicae Wor. (Club root); Mt. Colah (Sydney Metropolitan Area).
Bromus unioloides (Prairie grass).- Rhynchosporium secalis (Oudem). J.J. Davis (Leaf Spot); Wildes Meadow.
Carica papava (Papaw) - Ascochyta caricae Pat. (Black Spot and stem rot). Coff's Harbour. This disease causes severe damage to papaws in Queensland.
Cassia sp. (Cassia).- Schizophyllum commune Fr.(Wood rot) Baulkham Hills (Sydney Metropllitan Area).
Centaurea cineraria (Dusty miller).- Meloidogyne sp. (Root knot) Turella (Sydney Metropolitan Area.).
Ceratopetalum gummiferum (Christmas Bush).- Phytophthora cinnamomi Rands (Root rot); Castle Hill.
Citrus limon (Rough Lemon).- Woody gall virus (Woody gall); McDonald River, Collaroy, Gresford, Cornwallis, Castle Hill.
Citrus sinensis (Washington navel orange).- Concave gum psorosis virus; Raymond Terrace.
Cotoneaster pannosa (Cotoneaster).- Armillaria mellea (Vahl.) Quel. (Root Rot); Mt. Wilson.
Crotalaria lanceolata.- Rhizoctonia solani Kuehn (Stem canker); Grafton.
Daucus carota (Carrot).- Meloidogyne hapla Chitwood (Root knot); Griffith, East Maitland.
Echinochloa colonum (Awnless barnyard grass).- Ustilago sphaerogena Burr. (Smut); Pilliga.
Eranthis hyemalis (Winter aconite).- Urocystis eranthidis (Pass.) Ainsw. and Sampson (Smut); Mt. Wilson.
Eupatorium adenophorum (Crofton Weed).- Cercospora eupatorii Peck (Leaf spot). Stroud, Murwillumbah, 1956.
Fagus sylvatica (Beech.)- Armillaria mellea (Vahl.) Quel. (Root rot); Mt. Wilson.
Forsythia sp. (Forsythia).- Armillaria mellea (Vahl.). Quel. (Root rot); Mt. Wilson.
Gompholobium latifolium. - Cronartium jacksoniae P.Henn.(Rust); Kurrajong Heights.

Hakea suaveolens (Hakea).- Armillaria mellea (Vahl.) Quel. (Root rot); Sydney Botanic Gardens.
Hibiscus sabdariffa (Rosella).- Sclerotinia sp. (Stem rot); Grafton.
Impatiens sultani (Sultan's balsam).- Meloidogyne sp. (Root knot); Moore Park (Sydney Metropolitan Area.).
Ipomoea cairica (Morning glory).- Meloidogyne javanica (Treub) Chitwood (Root knot); Maitland.
Leptospermum lambethii (Leptospermum).- Phytophthora cinnamomi Rands (Root rot); St. Ives.
Linum usitatissimum (Linseed).- Frost injury mainly on the lower leaves; Glen Innes.
Lolium rigidum (Wimmera rye grass).- Ramularia pusilla Ung. (Eyespot); Wagga Wagga, 1956.
Medicago denticulata (Burr medic).- Colletotrichum trifolii Bain and Essary (Anthracnose) and Cercospora sp. (Leaf spot); Baulkham Hills (Sydney Metropolitan Area).
Nerine sp. (Spider Lily).- Sclerotium rolfsii Sacc. (Bulb rot); Springwood.
Pastinaca sativa (Parsnip).- Meloidogyne hapla Chitwood (Root knot); Griffith.
Peperomia sp.- Sclerotium rolfsii Sacc. (Crown rot); Sydney Botanic Gardens.
Phaseolus aconitifolius (Moth Bean).- Oidium sp. (Powdery mildew); Sydney Botanic Gardens.
Phaseolus lathyroides. - Ascochyta sp. (Leaf spot); Baulkham Hills (Sydney Metropolitan Area).
Phaseolus vulgaris (French bean).- Oidium sp. (Powdery mildew); Moree and Sydney Botanic Gardens.
Pisum sativum (Pea).- Tomato big bud virus (Big bud); Windsor (Sydney Metropolitan Area).
Poinsettia pulcherrima(Poinsettia).- Botrytis cinerea Pers. ex Fr. (Bud and stalk rot); Taree.
Prunus lusitanicus (Portugueselaurel).- Oidium sp. (Powdery mildew); Leura.
Prunus persica (Peach).- Verticillium dahliae Kleb. (Black heart); Griffith.
Ranunculus sp. (Ranunculus).- Erysiphe polygoni DC. (Powdery mildew); Seaforth (Sydney Metropolitan Area).
Rhododendron (japonicum x molle) on R. luteum roots (Mollis azalea).- Armillaria mellea (Vahl.) Quel. (Root rot); Mt.Wilson.
Senecio lautus (Variable groundsel).- Meloidogyne sp. (Root knot); Kyogle. Puccinia tasmanica Diet. (Rust); Branxton.
Sesamum indicum (Sesame).- Oidium sp. (Powdery mildew) and Verticillium dahliae Kleb.(Wilt), Moree; Big bud (Virus),Yanco.
Solanum nigrum (Nightshade).- Alternaria solani (Ellis and Martin) Soraver (Early blight); Oberon.
Sorghum almum (Columbus grass).- Puccinia purpurea Cke.(Rust); Grafton. The sori were heavily parasitised by Darluca filum (Biv.-Born. ex. Fr.) Cast.
Symphytum officinale (Russian comfrey).- Meloidogyne incognita (Kofoid) White (Root knot); Canmeray (Sydney Metropolitan Area)
Syringa vulgaris (Lilac).- Armillaria mellea (Vahl.) Quel. (Root rot); Mt. Wilson.
Trifolium incarnatum (Crimson clover).- Cymadothea trifolii Wolf (Scoty Blotch): only the imperfect Polythrincium stage was seen; Comboyne.
Trifolium repens (White clover).- Cercospora sp. (Leaf spot); The Oaks. Rugose leaf curl virus (Rugose leaf curl); Kyogle.
Vicia sativa (Golden tares).- Cylindrocladium sp. with perfect stage in Calonectria (Root and crown rot); Raleigh. Sclerotium rolfsii Sacc. (Root and crown rot); Kyogle, Raleigh. Broad bean vascular wilt virus (?) (Shoot blight).
Vicia tetrasperma (Vetch).- Sclerotinia sp. (Crown rot); Pennant Hills.

Vigna sesquipedalis (Snake bean).- Sclerotium rolfsii Sacc. (Collar rot); Baulkham Hills.
Vigna vexillata (Cowpea).- Meloidogyne incognita (Kofoid) White (Root knot); Lismore.
Viola tricolor (Pansey).- Phytophthora parasitica Dastur (root and crown rot); Grafton.
Vitis vinifera (Sultana).- Black measles (cause undetermined); Koraleigh.
Zea Mays (Maize).- Maize wallaby-ear virus (Wallaby ear); Lismore, Grafton, Bellingen. This disease has probably been present in trace amounts for many years. It caused severe damage and was worst in crops affected while very young, and which were subjected to dry conditions.